THE AUTOMOBILE

VOL. XIII. NEW YORK—THURSDAY, AUGUST 17, 1905—CHICAGO No. 7

A SHORT TOUR AMONG THE SEQUOIAS.

By H. A. FRENCH.

SAN FRANCISCO, Cal., Aug. 7.—Increased use of automobiles on the Pacific Coast has resulted in the opening up to pleasure seekers of a number of exceedingly picturesque districts near the larger cities, which heretofore have been known to only a few cyclers or those who have taken driving tours with teams and light wagons. California is very sparsely settled, and there are vast tracts of undeveloped country, even in the immediate vicinity of its largest municipalities; railroads are few, and while the remarkable character of such parks as the Yosemite, the Mariposa Grove of giant redwoods, the Big Basin and other famous places has attracted a wonderful amount of tourist patronage, there are almost numberless spots of nearly equal picturesqueness which have been accessible only by means of stage lines running to small farming or mining communities, or are not reached at all by any regularly established means of transportation, and consequently are little known even by Californians themselves.

F. A. JACOBS AND PARTY TOURING AMONG THE REDWOODS NEAR LA HONDA, CALIF.

This is especially true of territory around San Francisco. The suburban district of California's largest city is exceedingly limited in area, but within "commuter" distance, as it would be regarded in any big Eastern center, can be found a country as wild and primeval as the far reaches of the Maine streams, and as picturesque as the more famous spots reached only after days of travel. The peninsula at the head of which San Francisco is located extends for about thirty-five miles between San Francisco Bay and the Pacific ocean, and from a width of twenty-five miles at the head of the bay it tapers to six miles within the environs of the city. A spur of the Coast Range forms its backbone, and along its central line are streams, lakes, canyons and splendid forests of towering sequoias, or redwood trees. In an Eastern state this district, within arm's reach of a city of 400,000 people, would be covered with thickly populated suburbs. Here, except for a line of beautiful towns and country seats along the bay side, and a small settlement here and there along the seashore, it is a wilderness of mountain and forest, intersected at convenient points by excellent roadways.

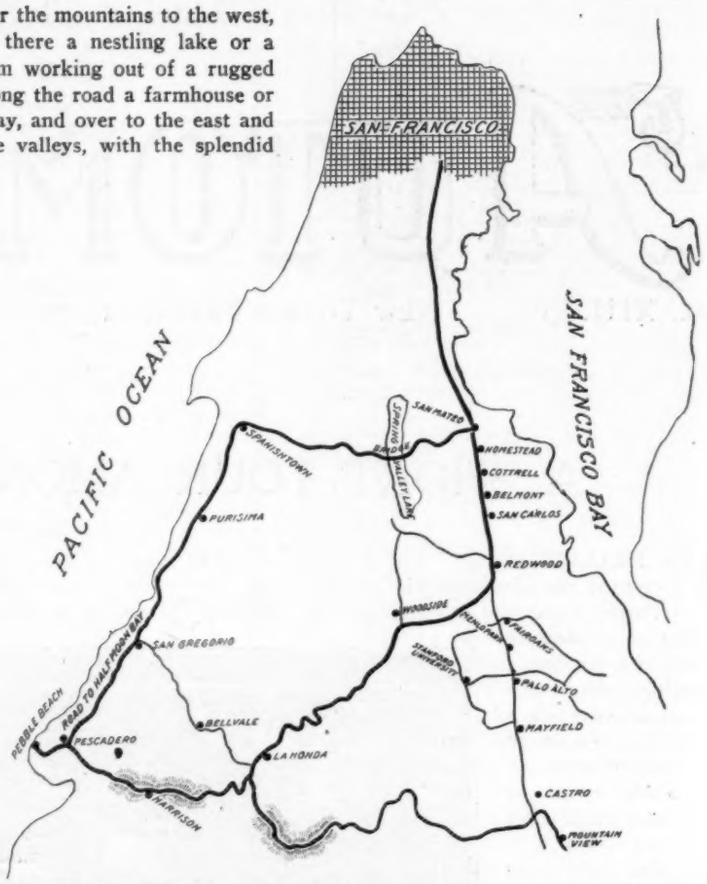
This same condition exists in a greater or less degree all about San Francisco Bay and beyond. Many of the attractive drives on the east side of the bay have already been brought into popularity by the automobilists, the poor condition of the roads leading out of San Francisco proper inducing the greater number of owners to take their cars over to the Alameda side on the ferry and start their runs from that point. Lately, however, the pioneering of the peninsula itself

has been begun by Messrs. Moore, Lowe, Jacobs and others of the more active members of the Automobile Club of California, and the result has been a revelation.

An auto trip of a day and a half was recently made by Fred A. Jacobs and a party of four friends over one of the routes into this section, which, up to the present time, is regarded by those who are most familiar with that part of the State as the most beautiful and charming of all the automobile drives within easy access of the California metropolis. In general terms, the run was along the bay shore through Burlingame and San Mateo to Redwood City, then across to Woodside and over the mountains to La Honda, in the heart of the redwoods, where a stay was made over night. The next morning the run was continued to Pescadero and the famous Pebble Beach on the oceanside, by the way of Harrison's, and thence through San Gregorio and Purissima, to Spanishtown, across the range again to San Mateo, and back to San Francisco by the original route. Altogether the run approximates 140 miles.

The run to Redwood City is known to all San Francisco automobilists. That portion which extends from Redwood to Pescadero and back to San Mateo is but little known, though the growing knowledge of its charm bids fair to make it one of the most popular in the entire state. The road winds over the mountains and through canyons, with some stiff grades, but the roadway is in excellent condition, and the run can be taken with ease by any car of moderate power. Mr. Jacobs and party made it in an 18-horsepower, two-cylinder Rambler surrey, which took all the grades with full load without trouble. There was not an instant's stop on the run for repair of mechanical parts.

The climbing begins within a mile of Redwood City, and the route enters the redwoods soon after passing Woodside. From this point to within a few miles of Pescadero the run is almost entirely through forests of these magnificent trees. At the summit of the range there is a view such as people cross continents to see. Sweeping forests cover the mountains to the west, with here and there a nestling lake or a mountain stream working out of a rugged gorge; back along the road a farmhouse or two dots the way, and over to the east and south lie fertile valleys, with the splendid



MAP OF SAN FRANCISCO PENINSULA, SHOWING ROUTE OF A DELIGHTFUL SHORT TOUR.

buildings of Stanford University among the Menlo Hills in the far distance toward the head of the bay.

At La Honda there is a grove of the giant sequoias so towering and so dense that the normal twilight of waning day is advanced a full hour. The party reached this point at dusk, and after dinner at a comfortable hotel, was entertained by a party of campers before a big campfire within the grove itself. Those who have not experienced the charm of a night beside blazing logs in the heart of the forest have something still to anticipate with pleasure. Among the redwoods the charm of such an experience would be multiplied many fold. The great trunks taper upward till the tops seem to reach to the stars themselves, while the high arching branches appear to form a vast cathedral in which the spirits of the elements might worship with awe; the leaping tongues of flames illuminate the giant branches and cast shadows in myriad shapes, reaching out into the hiding places of wonderful mysteries. Seen under such conditions, La Honda must surely remain a memory for a lifetime.

Beyond La Honda the redwoods grow even more splendid and dominating. The road, extending at one time beside a stream, at another along the floor of a gulch, and again clinging to the mountainside, changes too often to become monotonous. The shade is so heavy that there is refreshing coolness even at midday on the hottest day of the year. A little beyond La Honda the road to Pescadero turns abruptly across the stream, and there is danger of missing the way by continuing on what seems to be the direct route. Those who make this mistake are the gainers. The road continues on over the range to Mountain View, near the head of the bay, and thence to San José. Emerging from the redwoods, it runs up over a "hogback" formation from which there is a view that fairly dwarfs by comparison that from the summit on the road into La Honda. Those who make this run leisurely should by all means take this route, at least as far as the crown of the range.

GATHERING PEBBLES AT PEBBLE BEACH ON THE PACIFIC COAST NEAR PESCADERO.

Passing a Freight Team on Crown of Mountain between La Honda and Pescadero.

Down through the La Honda canyon to Pescadero the run is a kaleidoscopic variation of the same general scenery until within half a dozen miles of the town, where the redwoods cease. Rolling foothills grow into forest-covered mountains, while the town, with its white-painted houses and well-kept yards and streets might easily be the original "Spotless Town." Pebble Beach, near Pescadero, is one of California's famous spots. Its pebbles are often sent abroad to be cut and polished, and are like none others in the world.

The run back to Spanishtown is along the edge of the Pacific Ocean. The grand expanse of the ocean is in sight all the way, and the surf rolls unceasingly. Back across the peninsula the route lies through open rolling country for nearly the entire distance, and the road is by far the finest highway in this section of the state. From Menlo back to San Francisco it is the old story.

Taken leisurely, with frequent stops to enjoy the full beauty of the country, the run is little short of ideal. Its crowning attraction is its proximity to the city, and the visitor from the East who cannot spare the week's time, or stand the exhaustion of the rough trip into the Yosemite, can hire a car and a chauffeur for a day, or a day and a half, and feel that he has not missed so much, after all.

A **light delivery van** driven by a motor that will run on almost any hydrocarbon—gasoline, kerosene, alcohol, methylated spirit or benzine—is being manufactured by the Parsons Motor Company, of Southampton, England. The motor resembles in every respect the ordinary type of single-cylinder, vertical, four-cycle motor except that the inlet valve, which is of large size and is mechanically operated, is placed at the top of a tube through which the incoming gas passes on its way to the cylinder. The outside of this tube is jacketed, and the jacket is filled with hot gases from the exhaust. The object of this arrangement is to heat the gases as they enter, and this, it is said, is the secret of the successful operation of the motor on so many different kinds of fuel.

Air-Cooled Motors in Principle and Practice--II.

By HERBERT L. TOWLE.

(*Continued from page 76, issue of July 20.*)

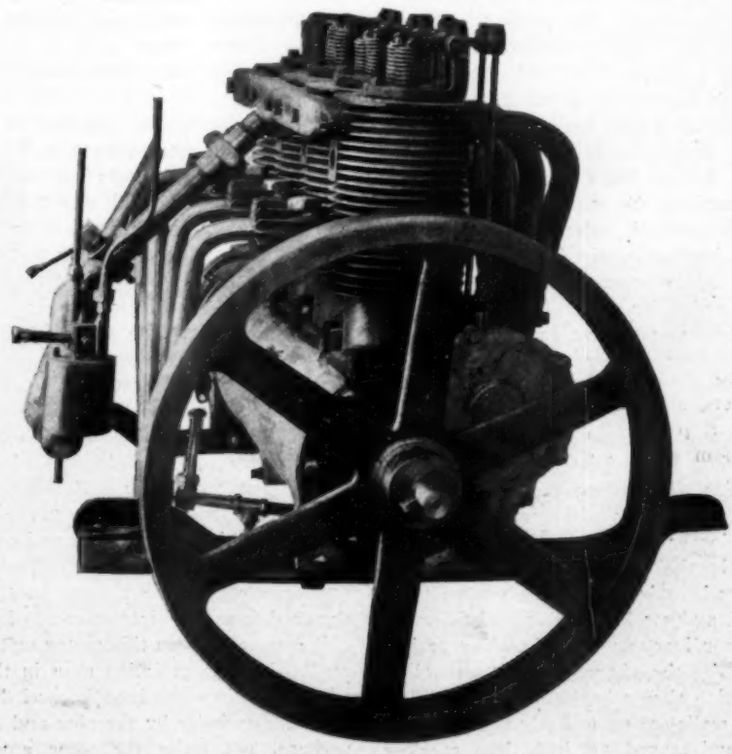
HAVING thus gone over the general principles involved, we may next take up the particular devices selected by different builders to disperse the heat with the rapidity demanded by considerable cylinder capacity.

As the nearest in type to the simple flanged cycle motor, perhaps the motor of the Crestmobile may be placed first. In this motor the conventional valve arrangement is retained, the suction-opened inlet valve being located directly under the exhaust valve. The distinguishing feature of the cooling flanges, which are cast integral with the cylinder walls, is their exceptional depth and thinness. By the exercise of special skill in moulding, they are made of extreme depth over the end of the cylinder, where the greatest heat is liberated. The motors run at high speed and are mounted at the front of the car, where they depend on the natural draught of the car's motion to supply them with air. Naturally the cars are light and of fair speed.

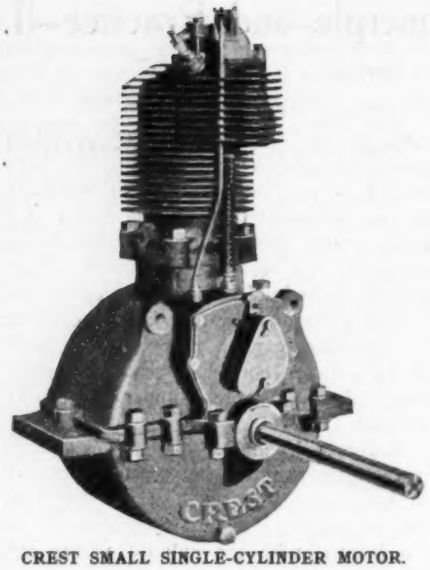
A distinct departure from the motorcycle type is made in the motor of the Franklin car. In designing this motor the Franklin Company's engineer, Mr. Wilkinson, reasoned that the principal cause of overheating in cycle motors was the high speed at which they were run, which compelled the cylinder and flanges to take care of an excessive flow of heat. He reasoned that by reducing the normal speed from 1,800 or 2,000 to 1,000 or 1,200, and by providing power enough, in proportion to the car's weight, so that the motor could ordinarily be run somewhat throttled, he would very much reduce the liability to overheating. Naturally this resulted in a much greater cylinder capacity for the car's weight than French practice indicated; but by dividing this capacity between four cylinders, each of 3 1-4 inches bore and stroke, the problems raised by large cylinder sizes were avoided.

Moreover, by placing both valves directly in the cylinder head, the area of inner wall surface exposed to the heat was reduced; and by placing the motor transversely in the bonnet, with the exhaust valves and pipes toward the front, every chance was given it to receive the benefit of the natural draught of the car's motion. So successful did this arrangement prove that it was not even necessary to use an especially low compression, such as is frequently required to avoid overheating the cylinder head. Under full load, the compression is about 65 pounds per square inch.

A light car, with the consequent ability to run throttled a large part of the time, was obtained by the use of a very compact planetary gear on one end of the engine shaft, direct chain drive from that to the axle, and very flexible springs to save the frame and body from racking. That the system thus evolved has been successful goes with-



FRANKLIN FOUR-CYLINDER VERTICAL MOTOR, SHOWING TUBES FROM AUXILIARY EXHAUST PORTS ON LEFT SIDE.



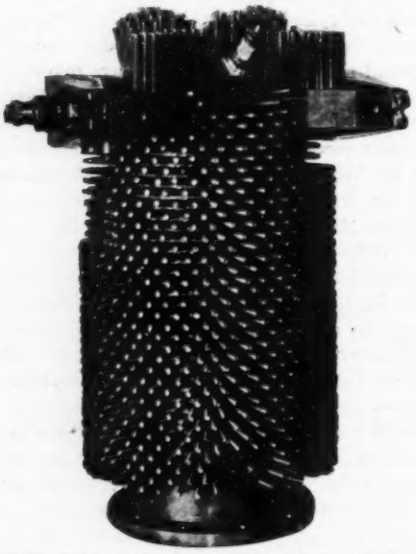
CREST SMALL SINGLE-CYLINDER MOTOR.

out saying in view of the great popularity and excellent performance of these little cars.

In the 1905 Franklin motors the bulk of the exhaust gases is discharged through an auxiliary port uncovered by the piston near the end of its stroke. This feature is quite similar to that employed in certain stationary engines, save that in the Franklin a check valve prevents the gases from being drawn back at the end of the suction stroke when running throttled. By using this device, which diverts the stream of flame which at full load would otherwise flow by the exhaust valve, it has been found possible to augment the normal speed, and therefore the power, some 20 per cent. over last year's rating. The present motor is geared to run 1,000 revolutions per minute at twenty miles per hour, and is capable of driving the car thirty miles an hour or a little faster on a level road.

In the larger Franklin motors, marketed this year for the first time, the construction is substantially the same, except that mechanically opened valves are substituted for the check valves in the piston exhaust outlets. These motors are arranged fore-and-aft, and a fan at the front of the bonnet, which is open save for a lattice-work screen, is brought into service to assist in the cooling. The 20-horsepower motor has cylinders, 4 inch bore and stroke, and runs 1,000 r. p. m. at 27 miles per hour, the maximum speed being given as about forty miles. The compression in this motor is about the same as in the smaller size.

The pioneer among the large air-cooled motors is the Knox, which for several years has been built in piston diameters of 5 inches, and strokes of 8, 7 and 6 inches. An extraordinary amount of cooling surface is given by the characteristic "porcupine" construction shown in the illustration. The cylinder walls are made fairly thick and are drilled and tapped 1-8 inch deep at close intervals all over their outer surfaces. Into these holes are screwed pins threaded over their whole length and projecting 2 inches. Over the cylinder head, where the greatest cooling effect is necessary, there are ten pins in each square inch of cylinder surface. On the cylinder walls there are 9 and 8 to the square inch. The radiating surface of each of these pins, which are 7-32 inch in diameter over the threads, is calculated to be 3.3 square inches. On the average, therefore, the radiating surface is 29.7 square inches for each inch of cylinder surface. The screw threads on the pins serve the double purpose of increasing the area and catching the air. The pins are of steel, this metal having been adopted by the company after trying copper, brass, and even aluminum, all of which failed on account, apparently, of the difference in coefficient



PORCUPINE-LIKE CYLINDER OF KNOX ENGINE.

of expansion between them and the cylinder walls.

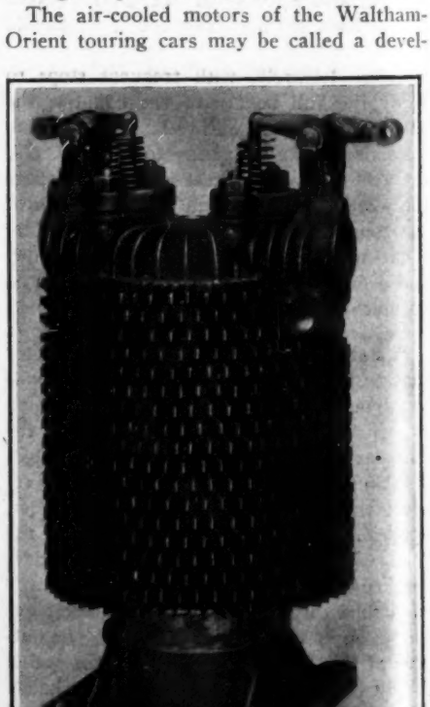
The location of the cylinders is such as to give the best natural draught. The engine lies horizontally fore and aft below the body, with the cylinder head directed forward, and the natural air current is assisted by a small fan discharging upon this cylinder head. With this arrangement there can be no eddy currents of air such as occur behind the cylinder of a vertical engine. In the case of the two-cylinder engines, the rear cylinder is also cooled by a similar fan, and the makers state that, although it might be supposed that this fan ought to draw air from the cylinder instead of blowing upon it, practically it is found that the natural air current is an eddy in the opposite direction, which, therefore, is assisted by the fan. A point on which the makers lay especial stress is the absence of "pockets" screened from the direct current of cold air.

It appears that in this motor more use is made of direct radiation than in the ordinary type, since the heat is carried further from the cylinder by the pins and there is, perhaps, not quite the same amount of mutual radiation from hot surface to hot surface as in other motors. The value of the air currents is necessarily small as compared with the flanged type of motor, since the closely set pins will naturally prevent any considerable velocity from being attained by the air. The success of this motor is therefore due partly to radiation and partly to the extraordinary development of the cooling surface, combined with moderate air velocity maintained, when the car is running slowly or standing still, by the fan. It is worthy of note that the Knox is one of the few air-cooled motors which can be run for any length of time with the car standing; the reason being, of course, its comparative independence of a rapid stream of air.

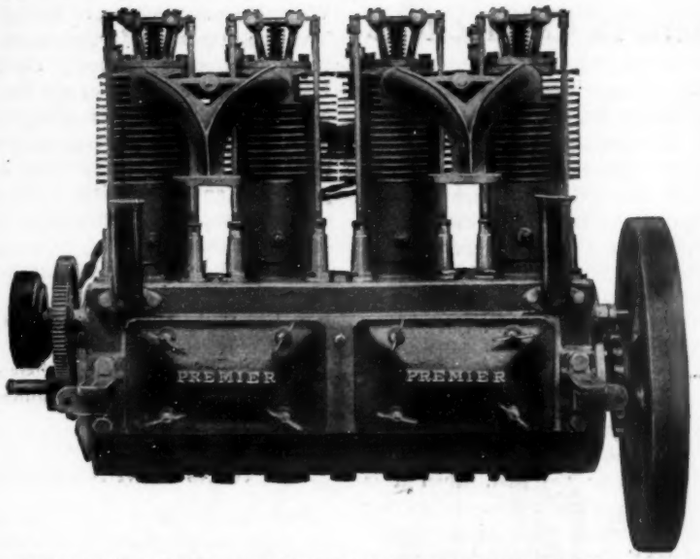
The motors already described have been touched on at length as being the oldest of their respective kinds in this country. It is now in order to take up the newer types of motors, and to indicate where these owe their success to development along the lines indicated, and where new ideas have been brought in.

The motor of the Premier car has four cylinders 3 3-4 inches bore by 4 1-4 inches stroke, and is rated at 16-horsepower. It is located transversely in front, like the 12-horsepower Franklin motor, of which it is practically an enlarged edition. It has no piston exhaust, and the increase in cylinder dimensions is made practicable by the comparatively low compression used—about 40 pounds per square inch. This car likewise has a two-speed planetary speed-changing gear, but it is relatively larger than that of the Franklin and is located under the body, where it receives the drive from the engine through a sprocket chain to the rear axle.

The air-cooled motors of the Waltham-Orient touring cars may be called a devel-



CORBIN CYLINDER WITH PINS ARRANGED IN COMBS.



EXHAUST SIDE OF PREMIER VERTICAL ENGINE, INLET VALVES ON TOP.

opment from the small air-cooled motors of the Orient "buckboards." They are quite different in design, however, having mechanically-opened inlet valves arranged symmetrically opposite the exhaust valves. They have four vertical cylinders, and are made in two sizes, rated at 16 and 20-horsepower, respectively, with cylinders 3 1-4 inches bore by 4 1-4 inches stroke and 4 inches bore by 4 1-4 inches stroke. Both are ranged fore and aft under a bonnet with lattice front, and are cooled by a strong blast of air from a fan in front.

The especial feature of these motors is the form of their integral cast flanges, which on the cylinder walls are square in plan instead of circular, making practically a continuous series of horizontal ribs from front to back of the motor, and are very deep and thin. On the heads the flanges are vertical, and lie fore and aft so as not to obstruct the air current. The makers state that the normal speed is about 1,000 revolutions per minute, representing about twenty-two miles an hour, but that they can be speeded to 2,000 revolutions per minute when required. I am unable to give the compression, but assume it to be moderate. The transmission is by 3-speed sliding gears, driving direct in the high gear, and as the car is light it may be supposed that the motor runs throttled most of the time.

One of the new cars this season is the Corbin. Its designer, Mr. Bogart, may possibly have borrowed the idea of its radiating pins from the the Knox motor, but the details are certainly ingenious and highly creditable. Instead of handling each pin as a separate piece, a number of them are stamped together out of sheet steel and connected so as to form a piece resembling a steel comb. The back of this comb is inserted into a groove planed lengthwise in the cylinder, and the edges of the groove are pinned down tight against the comb, thus making a very rigid contact. To catch the air still further, the teeth are then staggered as the illustration shows. The cylinders, four in number, are of course separate, and in the largest size, or Model C, are 4 1-2 inches bore by 5 1-2 inches stroke, the motor being rated 24-28-horsepower. The valves work downwards in the cylinder head, being flush with the inner face, and are both mechanically operated. Over each pair of cylinders a 14-inch horizontal fan, driven by gearing, discharges a blast of air downwards upon the cylinders.

In a letter to the writer, Mr. Bogart states that the clearance space is 2 inches deep, which would give a compression of about 65 pounds gauge under full load. Mr. Bogart attributes the company's success with its air-cooling system largely to the care taken to avoid sharp angles in the combustion chamber, with their attendant liability to cause pre-ignition.

The Cameron is a light car with a 3-cylinder vertical motor placed fore and aft under the bonnet and driving through 2-speed sliding gears and a propeller shaft. The bore and stroke are respectively 3 5-8 and 3 3-4 inches, and the compression is given as about 60 pounds. A fan is employed, and the exhaust valve is so placed as to be blown upon by the fresh entering mixture, this being accomplished by working both valves horizontally in opposite sides of a chamber extended upward from the cylinder head, which is cast integral with the cylinder.

(To be continued.)

DISPOSITION OF ENGINE IN WALTHAM-ORIENT CAR, SHOWING LONGITUDINAL ARRANGEMENT OF RADIATING FINS ON CYLINDER HEADS.

There are few things more tantalizing to the man waiting for a delayed trolley car on a hot day than to see an automobile roll smoothly by with the chauffeur in charge and three or four seats empty.

An English concern has brought out a self-warming food can that is said to be exceedingly convenient for automobilists and all who tour, camp, cruise or picnic. The can is double or jacketed. The outer jacket contains a chemical substances which becomes very hot when moistened, and also a small receptacle filled with water. When it is desired to heat the contents of the can the receptacle is punctured and the water is allowed to reach the chemical. In ten minutes the contents are steaming hot. Soups, meats, stews and similar foods are put up in this convenient form.

European motorcyclists who are interested in racing are discussing the advisability of making a separate weight limit for tires. The weight limit for the complete machine, with tires on, is now 110 pounds, and almost invariably the lightest of tires are used in important races. If the weight limit were set at 110 pounds without tires, and then a reasonable weight limit were fixed for the tires, there would be no danger of competitors using inadequate pneumatics and fewer machines would be put out of the race solely on account of the giving out of featherweight tires.

Two Years of Road Improvement in Connecticut.

ONE of the most interesting chapters in the biennial report of the Highway Commissioner of the State of Connecticut for the years ended December 31, 1903 and 1904, recently issued, is the one on the "Fourteen Trunk Lines System." In this is given an interesting word picture of the origin of Connecticut wagon roads and of the main lines of through travel to which the commissioner urges that the most attention should be devoted.

In the early history of the state, writes Commissioner James H. Macdonald, the principal means of communication and transportation was of necessity by water, since the state was practically a wilderness and roads had not been broken; in fact, the whole road system began in visiting from one farm to another. It was only after the country began to be peopled and the land purchased and occupied along the water courses, so that all available water front was denied, that new settlers were compelled to go back and open up territory away from the water. Such settlers found it necessary to make trails and open wagon roads to their farms, thus unconsciously and crudely establishing the highway system. Such parts of the state were devoted at first entirely to farming purposes, but the needs of the farmers had to be supplied, and so villages were begun which later grew into cities. In but a few instances has the good judgment of the founders of such trade centers been at fault; it is self-evident that the large cities have been wisely located, since their growth has been rapid and they have become permanent railroad centers.

Rebuilding Fourteen Trunk Lines.

Although the main highways leading out of the cities have as a rule been improved within the territorial limits of the cities or of the townships in which they are located, the system has not been generally extended by the adjoining towns, mainly owing to lack of funds. Some system other than the one now in vogue should be inaugurated, it is urged, if the state is to have good continuous trunk lines within a reasonable time. Since the beginning of state aid in Connecticut in 1895 work made possible by the appropriations has been principally devoted to rebuilding fourteen trunk lines. These lines upon which improvements are now being made, extend through districts having a population of 851,743 out of a total population of 908,420, and pass through and drain the trade of 138 out of a total of 168 towns. Thus, very nearly the entire population of the state and a large proportion of her business is practically served by a mileage of 1,032 miles of wagon roads. The location of these all-important main lines is show on the accompanying map of the state.

In view of the foregoing, it is evident that these fourteen trunk lines call for improvement just as rapidly as possible, and to this end the commissioner recommends that a special appropriation outside of the regular road appropriation be made to be used exclusively for the completion of these lines. The expense of all improvements on this system should be borne by the state without town assistance, allowing the towns to enjoy their regular appropriations as heretofore, he says. The appropriation need not be large and could be used as a special fund for the purpose.

Although the amount of money appropriated every session by the legislature has been very liberal in the past, when it is distributed among many towns it does not accomplish very many miles of continuous highway under the present system by which the towns are allowed to select the sections of the road to be improved.

Boston Post Road Forms Backbone.

One of the oldest, longest and most direct of the trunk lines in the state is the Boston Post Road or turnpike, crossing the New York-Connecticut interstate border close to the shore of Long Island Sound and passing through Greenwich, Stamford, Norwalk, Bridgeport, Stratford, Milford, New Haven, Guilford, Old Saybrook, Lyme, Waterford, New London, Groton and Stonington. This road extends for 120 miles through the state, in sight of the sound most of the way, and, being very direct and touching such a large number of cities and villages, it is much traveled. The route of many a historic automobile endurance run and tour has been laid in whole or in part over the Boston Post Road, and it is one of the best known roads to Eastern tourists. Almost every one of the twenty-five townships it crosses is now at work improving this popular highway. Each appropriation is furnishing new links to this chain and it will not be long before the entire road is finished, from Port Chester, N. Y., to Westerly, R. I.

Ten south to north trunk lines extend across the state from this main east and west trunk line, and these ten roads touch nearly every large city in the state and are the chief arteries over which flow most of the products of the entire farming region of the whole community.

Trunk Lines Converge at Hartford.

It will be observed that these north and south roads start at sea ports and reach inland to the large trade and manufacturing centers of the state, and beyond into the thickly settled sections of the neighboring state of Massachusetts. Besides the Boston Post Road or Shore Road along the Sound, there are three principal east and west roads, one of which almost bisects the state, passing through New Milford, near the New York State line, and easterly through Waterbury, Meriden, Middletown and Willimantic and on toward Providence, R. I. The two others are further north and converge or bisect each other at Hartford. As Hartford is the capital of the state and the largest city, it is natural that most of the main roads should converge upon that place, which is central geographically as well as politically and industrially. So it is that no less than eight of the main trunk lines pass through Hartford.

When all of the roads indicated shall have been put in good condition from one state line to the other, Connecticut will rank second only to Massachusetts as a touring ground for eastern automobilists, owing to its proximity to the metropolitan district and its attractive scenery.

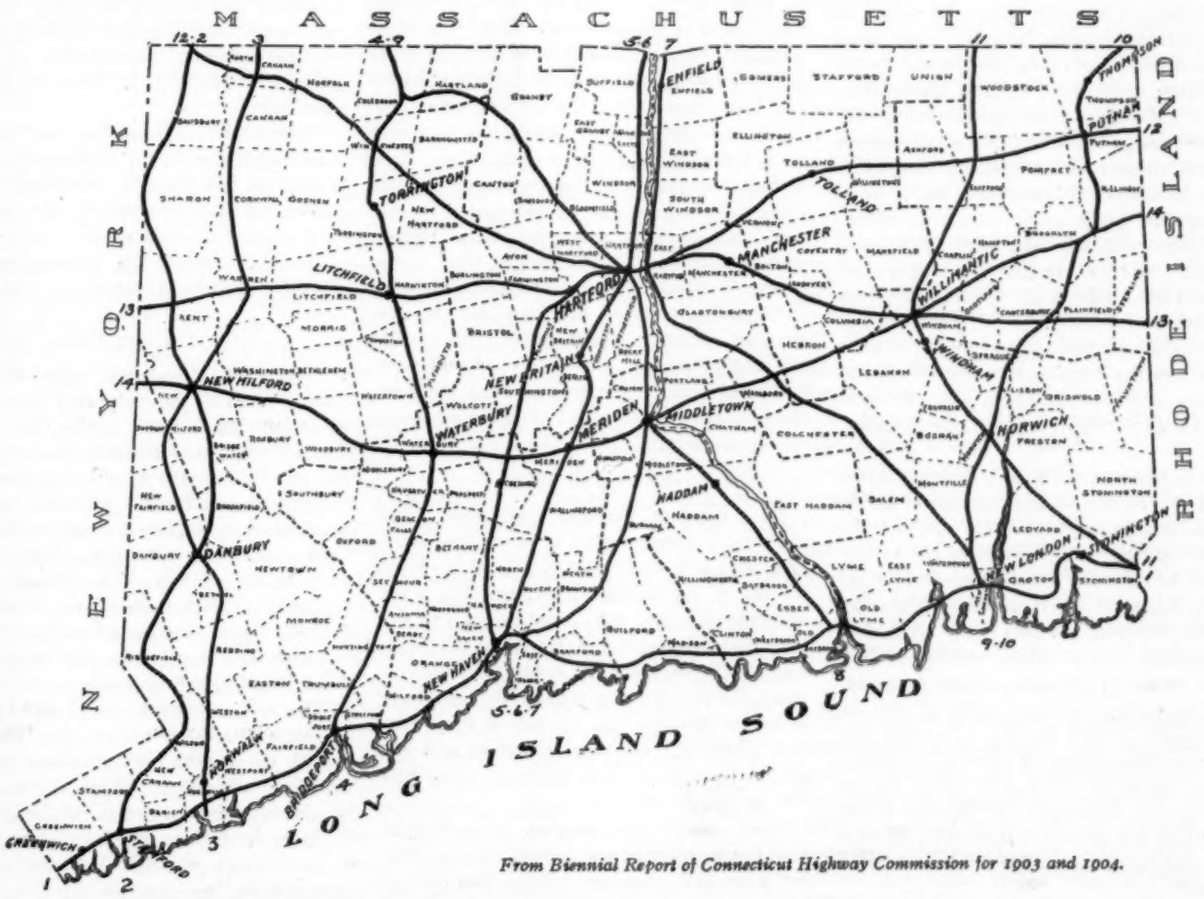
All Towns Want Apportionments.

Since the inception of the state aid system for road improvement in Connecticut ten years ago, a total expenditure of $2,012,775 has been made for road work under state administration and control. Of this aggregate amount the state appropriated $1,173,297, and the townships an aggregate of $839,478. Unfortunately there appears to be no clear statement in the report of the actual total number of miles of highway improved under state aid since 1895, although many tables are given showing the participation of the different towns (townships) in the appropriations each year. These tables show that the number of towns in the state that received an apportionment of the state appropriations were as follows for the different years: 1895, 77 towns; 1896, 83 towns; 1897, 85 towns; 1898, 74 towns; 1899, 114 towns; 1900, 154 towns; 1901, 142 towns; 1903, 132 towns; 1904, 132 towns. During the ten years that state aid has been in force in Connecticut, 35 towns have received apportionments for ten years, 19 towns for nine years, 21 towns for eight years, 15 towns for seven years, 23 for six years, 22 for five years, 8 for four years, 11 for three years, 8 for two years and 5 for one year. There are 168 towns in the state, and during the year 1903, for the first time in the history of the movement, all of the 168 towns made application for apportionments for road improvement out of the next appropriation, six towns that had never before made application having sent in requests.

Built 121 Miles in Two Years.

Summarizing the period of 1903 and 1904, the report states that when the applications for apportionments that had been received were opened it was found that 95 towns had asked for $9,000 each and 37 towns asked for amounts ranging from $500 to $6,000, making a grand total of $1,045,500, which was $422,626 in excess of the state appropriation. These statements clearly indicate the success of the state aid system in the state of Connecticut. To make the allotments come within the appropriations the towns asking for $9,000 were allowed but $5,670.

At the close of the season of 1904, as the result of two years' work, 220 contracts had been let and 342 sections of road improved, calling for the expenditure of $504,593.93, the total number of miles of highway improved having been 121. This represents work finished, accepted and paid for at the end of 1904. In addition to the foregoing, contracts had been let for the improvement of 183 additional sections, calling for an expenditure of $387,471.38, which, when finished, will accomplish the improvement of 74 additional miles of road. Many of these contracts had been nearly finished when the report was written. There was then a balance of money amounting to $257,574.19 to be devoted to the work after the opening of this season, which was available under the last appropriation. This balance will pay for approximately 59 miles of road building, so that the total number of miles of good road that will have been paid for by the appropriation of 1903-1904 will be 254, which is to be added to the number of miles improved before January 1, 1903.



From Biennial Report of Connecticut Highway Commission for 1903 and 1904.

MAP OF CONNECTICUT, SHOWING FOURTEEN TRUNK ROADS WHICH ARE BEING IMPROVED UNDER STATE AID.

Use of Automobiles Discussed.

Much of the Commissioner's report is devoted to the proper ways for constructing and maintaining different kinds of roads, the building of culverts and bridges, and similar matter of particular interest only to the road builder. However, there are at least two subdivisions of chapters that are of especial interest to automobilists. One has reference to the use of automobiles on the roads and the other to guide posts. Regarding the former Commissioner Macdonald says:

"The reception accorded the advent of the automobile on our roads by the people of Connecticut who reside outside of the cities is practically the same as they extended to the introduction of the bicycle, and the objections offered are very similar, namely, fast driving and careless attention to the rights of others using the roads. The abatement of the abuse of the highways by some bicycle riders was brought about in part by legislation and local town rules; but the principal reason was from the fact that those who rode the bicycle used more care while riding over the roads of the state and the public in general adopted bicycles as a means of locomotion for business and pleasure. * * *

"The objections offered to the use of automobiles on the highways of our state will rapidly disappear if the drivers of autos are more careful in the use of their cars on our roads, and also when the machines are in more general use than they are to-day. Already horses are not so easily frightened and a great many earlier objections to the use of the highway by the automobile are fast disappearing. * * * The only apparent injury to our roads arising from their use by automobiles is found on roads of macadam construction, and is due to the fact that the rapidly moving car produces a draft which creates a suction sufficient, when the road is dry, to remove the screenings from the surface of the road; this results in leaving the stone without protection. The splinter treatment suggested for the care and maintenance of macadam roads will remove this objection.

"Certainly automobiles have demonstrated that they can be made very useful, both for business and for pleasure, and inasmuch as they have been so generally adopted I think it would be wise for us to accept them as a part of the traffic we will have to have on the highways in the future. Proper legislation and obedience to the rights of others using the roads, together with a careful handling of his machine by the driver, will bring the automobile into popular favor. The tires used by the automobiles are of no injury to our roads, and when objections which are offered to-day have been eliminated these machines can be made very useful servants to do our bidding, whether it be for business or pleasure."

"Splinter" Treatment of Worn Roads.

The "splinter" method of treatment to which reference is made consists in spreading over the surface of the road a "very light covering of splinters or chips of stone, ranging in size from 1-2 inch to 3-4 inch in their longest diameter, free from dust."

The stone, when applied, furnishes the necessary protection to the road on its first application, and the action of horses' hoofs and wagon tires pulverizes the fragments, the small particles broken off falling down between the chips to the surface below, where they are protected from the heat of the sun and the action of the wind by the splinters above, and soon begin to act as a binder to cement the loose stones to the old surface, retaining the moisture. No rolling or sprinkling is necessary.

Urges Erection of Guide Posts.

"Now that we are inviting people to travel over our system of improved highways," writes Commissioner Macdonald with reference to guide posts, "it would be an added inducement if, when they come to travel over our roads, they could find a guide post at every fork and intersecting road." (To this every automobilist will give his hearty "amen.") "No small amount of inconvenience and vexatious delays are caused by town officials neglecting to erect and maintain guide posts. Some years ago the wheelmen of our state made a personal and united effort along this line, and erected hundreds of guide posts which have been invaluable to travelers. Time, however, has made sad havoc with them, and they have become weather-beaten or broken down, and hundreds of our cross roads have no indicating mark to tell strangers their objective point."

The Commissioner then calls the attention of the reader to the mandatory guide post law designated as Section 2,045 of the General Statutes, which requires the selectmen of every town to erect and maintain at every place of intersection of highways a substantial post not less than eight feet high, bearing near its upper end the plainly marked name of the next town or place, and of such other town or place of note as the selectmen think proper, to which the road leads, the number of miles to the same, and the figure of a hand or of an arrow indicating the direction. A penalty of $5 fine against the selectmen for every offense is provided for neglect or refusal to observe this law.

Concluding his remarks on the subject, the Commissioner says: "If the town officials will take this matter up and install guide posts on the main highways of the state they will not only confer a great favor to all who may have occasion to use the roads, but in addition will assist in perfecting the improved highway system, so that in everything in every way connected with the comfort and convenience of those who may have to use our roads the state of Connecticut may occupy its proper place in the front rank of modern methods of highway improvement."

Do not neglect your brakes. They are liable to become worn as the season advances, and may fail you unexpectedly when they are most needed unless you keep them well adjusted.

Temporary Repairs on an Inspection Tour.

By G. A. RAGE.

THE Manager of the P. D. & Q. leaned back in his office chair and meditatively re-read the letter he held in his hand. "Well," he said, after a pause, handing the letter over to his assistant, "I guess I'm up against an exploring expedition in the territory the new branch line passes through, and I don't just see how it's to be done."

He got up and studied a big map on the wall with an expression of dissatisfaction that increased momentarily.

"It's a nice prospect," he muttered, half to himself. "Get up at five in the morning and catch a slow train; spend the day changing from trains to trolleys and from trolleys to buggies so as to get a notion of the long-distance line by looking at a few of the places where it comes within reach of a railroad station or a trolley line. Get home about midnight, done up, covered with dust, and without any decent notion of the line, too tired to remember what things looked like—— Say, though, what's the matter with doing it in an automobile?"

"Nothing," replied his assistant, "except that we haven't an automobile. Of course, we might hire one, or——"

The rest of the sentence was cut short by the Manager. "Hold on! I know what I'll do—borrow one."

He Borrows a Car.

In a moment the telephone wires were carrying a conversation between the Manager and a friend, who was glad to place his car at the Manager's disposal, the latter agreeing to place the handling of the car in competent hands. After more telephoning, arrangements were made for an early start the following morning, the Manager to be accompanied by his friend the Amateur Chauffeur, the Civil Engineer and one of the Directors. The Amateur Chauffeur was to handle the car.

Linen dust-coats, goggles, rain-coats in case the weather behaved badly, and a camera were got ready and loaded into the car when the party assembled. A couple of jabs at the carbureter and a swing of the crank, and the motor commenced puffing quietly; a moment later and the car was under way, the Amateur Chauffeur at the wheel, the Manager beside him, while the Civil Engineer and the Director occupied the tonneau seats.

A short ride through the city streets and a still shorter trip on a ferry brought the car to the real beginning of the route to be covered.

The car was a good-sized, roomy machine with four-cylinder, vertical motor, sliding-gear transmission giving three speeds, and drive by side chains. The motor did not seem to be in the best of condition. "It needed snap and ginger," as the A. C. expressed it. However, it ran without requiring any attention, and the car sped along the smooth road at an exhilarating rate, about a hundred yards an hour within the legal speed limit. The weather was perfect, and everyone was in high spirits.

"Hello!" suddenly exclaimed the A. C. "Something doing ahead there." In another couple of minutes it was seen that a fine-looking, big car was standing by the road surrounded by a group of worried men, who alternately stood and made suggestions and dived into or under the car; one was permanently engaged, apparently, on some job that necessitated a restful attitude on his back in the dust. Four wide grins overspread four faces in the Manager's car.

"Guess our car isn't so bad, after all," commented the A. C., and everyone agreed with him. A bend in the road, and the stalled car and its corps of anxious attendants were shut from view.

"Great!" said the Manager—"great! There's nothing I know of that's equal to——"

When the Air Went Out.

Fiz-z-z-z-z! S-s-s-s-s! And then bump, bump, bump as the right rear tire went flat and the rim felt the road. The car was quickly stopped at the side of the road, and the A. C. and the C. E., who were both experts, began to peel off their coats in a manner that indicated considerable familiarity with the situation. The Manager took up a position of advantage, so that he could watch the operations of his friends, and the Director assumed a sympathetic expression and stood where he could see the bend that hid the stalled car.

The A. C. examined the tire and had just announced a blow-out in the shoe when the C. E., who had been rummaging in the tool-box, announced cheerfully that there was nothing in sight to mend the shoe with. A spare inner tube was available, but with a hole blown through the shoe the tube would have been useless.

The A. C. began to rack his brains in mentally figuring how far four men could push a heavy car; the Manager cast his eye over the landscape in search of a house which might, perchance, contain a telephone, and made sundry remarks about "repair wagons" and "solid tires" and so on. The C. E. had meantime been examining the burst inner tube.

"Would you look at that!" he exclaimed. They all would, and did look.

Rubber Like Wet Paper.

The tube was so weak that it parted at a slight pull like wet paper, and the only wonder was that it had not let go long before. Everyone said something appropriately emphatic, and then all turned to the task of finding something with which the shoe could be patched. The A. C. sug-

gested a piece of the Manager's heavy raincoat. "They always put good stuff in a good coat like that," he remarked. The Manager, however, did not see that his duty lay that way, and the coat escaped.

Finally an old lap-robe of waterproof cloth was discovered, and though the material was of doubtful strength, a piece of it was ruthlessly hacked out, doubled and laid so as to cover the hole in the shoe, without cement, for the simple reason that there was none. The A. C. got out the beautiful, polished brass pump, and went through the motions of pumping up the tire; but nothing happened, except that the motive power got very much overheated. So the A. C. desisted, remarking in a tone of suppressed emotion that the pump was "on the blink," and proceeded to take it to pieces. It was found that the piston was so tight in the barrel that no air could pass the cupped leather, which acted as a valve, on the up stroke. A couple of pinches with the pliers remedied this, and the pumping proceeded laboriously, the "internal resistance" being great.

Mending the Air Pump.

"Why don't you oil it?" asked the Manager. "You'll have your piston rod siezing in another minute." "No oil," grunted the busy A. C. Nothing daunted, the Manager inserted half his person under the car for a moment, and emerged with one finger liberally coated with thick oil gathered from the drippings from the gear case. This was applied to the rod with immediate results, the A. C.'s temperature dropping several degrees in a few seconds.

The pump rod projected so far through the piston that the latter could not travel to the bottom of the barrel, so there was a clearance space that considerably reduced the efficiency of the pump, and considerably increased the "man-power" required to operate it. This could not be remedied without tools, and so was endured with all possible calmness.

While tire repairs were under way the Manager and the Director hauled out the camera (taken along to record certain road locations), set it up and focused it on the perspiring martyrs, telling them to look pleasant, as he wanted a photograph to show how they had stopped a car in the frizzling sun to repair a tire. They very kindly looked as pleasant as the circumstances would permit, and were duly photographed, but—the negative has not yet been developed.

The Jack Gave Out.

During the tire repair it was discovered that the tool-box contained a jack, a pair of pliers, a monkey-wrench, the beautiful pump and two tire-removing tools; the "crew" carried each a pocket knife, and one had a dinky little typewriter screwdriver which he persistently offered, but no one could use. The pump had to be mended before it could be used, and the jack went out of commission as it was being removed from under the axle. There was no tire-repair outfit, and nothing that could be used in case of further tire trouble. Everyone joined in the remarks that were made with reference to the lack of foresight of the owner of the car.

Finally all the stuff was collected and loaded, and everyone piled into the car and away they started, with many misgivings as to the stability of the right rear tire. It held on, however, and gave no further trouble throughout the day.

The rest of the forenoon was devoted to making the necessary visits to various widely separated points; and at about 1 o'clock a stop for lunch was made at an attractive wayside inn, where a good wash removed the traces of labor, and a hearty meal, eaten with the appetite of automobilists, made the incident of the morning seem like a good joke.

Motor Needed Tuning Up.

After luncheon a stop was made at a garage near the inn and several little things about the car attended to. By this time it had been discovered pretty conclusively that the man who owned the car was not in the habit of looking very far ahead. The lack of tire-repairing materials had already been thoroughly discovered; and it was next found that the lubricating oil tank was practically empty; that the rear hubs were uncomfortably hot to the touch for want of lubrication, and that several nuts were loose. Also the engine was badly in need of tuning up; it ran only fairly well, and one of the four vibrators was working very feebly.

After taking stock of these things the A. C. decided that in addition to cylinder oil, gear-case oil and oil for the hot hub bearings, it would be wise to take on some gasoline. "Ain't got none, sir," was the cheerful response of the garage man. "Sold the last of it not five minutes ago."

"Good moral," said the Manager. "Take gasoline when you are sure you can get it. If you take a chance on getting it at the next place you'll get it the way we're getting it right now." And all the rest made mental notes for future reference.

While the A. C. was attending to the tuning-up process considerable amusement was occasioned by the antics of the chauffeur of a big car that had been stopped at the garage. The man started his motor with a swagger, lounged into his seat with a "just-watch-me-do-it" air, and threw in his high gear. Then, with a supercilious glance around, he proceeded to forget that there was a clutch pedal on the car.

Clutch Gripped Fiercely.

The clutch banged in and gripped fiercely; the car gave a couple of convulsive jumps, every wrenched joint in the body creaking; the anti-skid bands on the driving wheels dug two ruts in the gravel, and away bounced the car, the helm hard a-port and the machine climbing the bank at an angle of fifteen degrees.

It vanished in a cloud of dust, and the impression left behind was that the chauffeur was altogether too clever to be left alone in a good car.

With the engine running much better and the car seeming to appreciate the attention given it, the road was taken once more and many miles traveled comfortably and speedily. While speeding along a smooth, shaded road, the car running very quietly, someone noticed a slight hiss-hiss-hiss from the motor. Like most noises in a gasoline motor, this one was difficult to locate, and everyone took a crack at guessing where it came from. The noise increased, however, until it became evident that something must be done.

Find a Gasket Blown Out.

The A. C. stopped the motor, and the ship's company got out to make a survey, and discovered that the gasket used to make a tight joint between the valve chamber and the flange on the end of the gas supply pipe had blown out, a series of sharp hisses resulting.

"What have we got to make a new gasket out of?" inquired the A. C., looking round at the other members of the party as if he expected to see them produce an assortment of packing of all kinds. Instead, everyone made for the car and a search was made for packing. Nothing was found.

A tool-box, hitherto unnoticed, was opened and found to contain a choice assortment of old junk, each piece of scrap iron being carefully isolated from its fellows in a neat little compartment. Old bolts and nuts, scraps of wire, bent and headless nails, small castings, invalid spark plugs—all were tenderly laid away in the little boxes, but nothing that would do to make the joint. Not even a piece of string could be found.

The Usual Crowd Collected.

Meantime a crowd of young hopefuls collected, coming, seemingly, from nowhere or out of the earth, and watched the fun, occasionally advising the acquirement of a horse, or making themselves famous by daring to grab the bulb, which was attached to the side of the car, and blow the horn.

After some time a passing farmer was hailed, and he produced a piece of tarred hemp, commonly called marline. A strand of this was soon made into a gasket, put in place and the flange tightened up, though with many misgivings, for the seating was not cooled by a water jacket. "No water within half a kilometer of it," as the A. C. remarked. The motor was cranked, and away the car went, all ears on the stretch for a repetition of the hissing.

There was no sound for as much as a mile, when the hiss-hiss-hiss again commenced, louder than ever. Again the motor was stopped, and again there was a council of war by the roadside. This time the stop was made in a little village, and the possibility of securing something to work with brought out a number of suggestions from

all the members of the party. Each man gave his idea and stated his reasons for believing it would do, and supported his opinion with such good reasons that everyone began asking everyone else, "What do *you* know about gaskets?"

Every Man an Engineer.

It then developed that, curiously enough, every man in the party had had an engineering training—not all in the same line. Immediately a new common interest was established between the four, and only the pressing need for a new gasket cut short an immediate exchange of experiences.

The Manager started the search, making for a store, from the upper rooms of which issued a varied collection of sounds which, the A. C. said, stood for music. After a short time the Manager came back with a handful of asbestos in the form of a flaky powder (stove asbestos, the dealer had called it), which he suggested making into a sort of dough with oil and putting in the joint. He explained, however, that he had not much faith in the scheme; and, the others agreeing with him, the powder was abandoned.

Nothing daunted, the courageous Manager started out again, and this time returned with *almost* the right thing—a piece of asbestos lamp wick. It was the fag end of a large circular wick, but unfortunately was so narrow that a packing ring could not be cut out of it, and an attempt to force the material into the form of a gasket failed because the stuff could not be "bent" edgewise, so to speak.

Copper Wire Was Suggested.

Copper wire was suggested, but the idea was abandoned—first because of the difficulty of joining the ends of the ring without tools, and secondly because there was no copper wire available.

So the Director went to the grocery store where the Manager had found the wick, having conceived the idea of using sheet lead, which, he thought, should be plentiful in a store where tea was sold. So it was; he got a square yard of it for the asking. When the young man in the store started for the upper floor, where the tea was kept, he suddenly remembered that there was no one in the store except the Director, whose duster and cap betrayed the fact that he was an automobilist. Evidently that was enough, for the young man went to the rear door and, in a gigantic whisper, said:

"Say, ma, come on an' watch the store a minute." Ma declined, being busy cutting someone's hair; so another great whisper: "Tell Billy to come. Hurry up; the feller's waitin'."

Presently Billy came, and sauntered in with an easy air that was very comforting to the Director, inasmuch as it proved to him that Billy's suspicions were not so serious as to be shown openly.

"Darn mean things, them," commented Billy, affably, referring to automobiles; "breakin' down out here every day. We ain't got no use for them out here; come to the way of thinkin' that they're no good at all."

The Director Tells Billy.

The Director's endeavor to convince Billy that the number of automobiles that got "stuck" was very small in comparison to those that went past in good order and were therefore forgotten was cut short by the entrance of the suspicious youth with the "tea silver," as he called it, for which he would not accept anything.

With the "lead" in his grimy hand, the Director went back to the car in triumph, and made a beautiful gasket of several thicknesses. But, alas, there was another blow-out before the car had gone a quarter of a mile, and another stop. The "lead" had been melted by the heat and blown out through the joint in a silver cloud on the adjacent cast iron.

When it was found that the third leak was in exactly the same spot as the other two it was realized that the seating was warped by the heat. Rough-and-ready packing being impossible under the circumstances, the A. C. took a good gasket from a similar joint on another cylinder and put it in the troublesome spot. Then the gasketless joint was cleaned, covered with thick oil, and screwed down, metal to metal.

This leaked a little, but it was somewhat better than the original leak in the other joint, and so was allowed to go as the best way out of the bother; and the party got home without further difficulty, the continual hissing being drowned most of the time by opening the muffler to help the motor up the steep hills.

On the Way Home.

The return journey, however, held a new pleasure for the automobilists, for they had discovered a subject in which all were interested intensely; and a general exchange of ideas and experiences took place. Naturally, the talk turned to the subject of break-downs, and many curious stories were told of accidents to machinery on sea and on land, in steamships, railroads, automobiles, elevators, and even trolley cars. Had it not been for the trouble on the road, due to the short-sightedness of the owner of the car, the four men might never have discovered that all had the same technical interest in the automobile.

Notwithstanding the trouble with the tire and the packing, the car covered a distance of about seventy miles at a reasonable rate of speed, doing work that could not have been done by a horse-drawn rig in less than two days of hard, tiring work. The members of the party had a jolly day in the country, the work being turned into pleasure, and reaching home in time for dinner in the evening, feeling fresh and ready for anything—one of the advantages of this mode of traveling.

A few weeks later the manager called up the A. C. on the telephone. "Hello," he said. "How would you like to go on another exploring expedition? The surveyors are at work, and I want to have a look 'round."

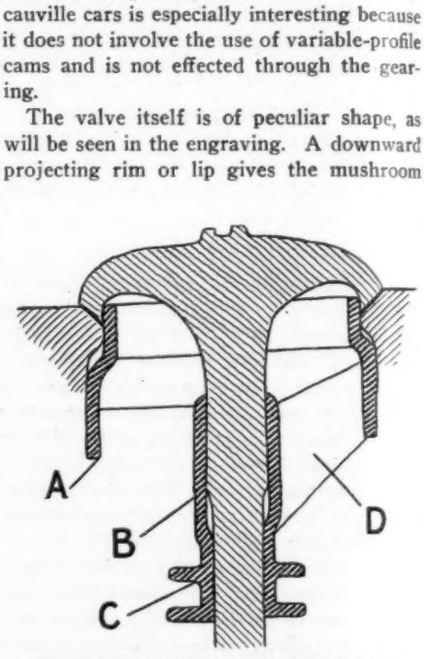
"Fine," replied the A. C.; "but where are you going to get your car this time? I'd like to make a little inspection tour of the tool box before you start."

The manager chuckled. "Don't worry; we got wise and bought a car of our own."

Decauville Valve Throttle.

The new method of regulating the motor speed by varying the effective opening of the mechanically operated inlet valve which has been adopted by the makers of the Decauville cars is especially interesting because it does not involve the use of variable-profile cams and is not effected through the gearing.

The valve itself is of peculiar shape, as will be seen in the engraving. A downward projecting rim or lip gives the mushroom



Sketch of Section of Decauville Valve Opening Regulator.

an inverted saucer form. The inner surface of the edge is vertical for a short distance, and fits snugly, though slidably, over the outside of the light annular casting *A*, which is so fitted into the valve opening that it can be slid up and down. A tube *B*, carrying a collar *C*, is a sliding fit on the valve stem, and is connected with the ring *A* by light arms *D*, all the parts marked *A*, *B*, *C* and *D* being, in fact, a single piece. A fork is fitted to the collar, and is operated by a lever from the outside.

It will be seen that raising the ring *A* by means of the outside lever acting through the fork and the collar *C* will reduce the effective opening of the valve, regardless of the lift of the cam, while the full opening of the valve will be available when the ring is brought to its lowest position with its upper edge flush with the lower edge of the valve seat. Thus the valve acts as a throttle, regulating the flow of gas to the cylinder, while the valve mechanism remains unaltered. The lever may be operated by hand or may be worked by a governor on the engine.

National Circuit Meet at Cleveland.

Rain Causes Day's Postponement—Kiser's Serious Accident Mars Day's Sport—Unusual Attendance.

Special Correspondence.

CLEVELAND, Aug. 12.—The opening day's races of the grand circuit meet given by the Cleveland Automobile Club at Glenville track was marred by a serious accident which resulted in Earl Kiser, the well-known driver of the Winton *Bullet*, being maimed for life. A heavy rain Thursday night necessitated the postponing of the opening races to Saturday. The attendance was the largest ever seen at Glenville, and the presence of a number of well-known drivers, together with the fact that the track was reported to be fast, foreboded record-breaking sport, but the terrible accident at the start cast a damper on the day's programme. Drivers as well as spectators were plainly depressed, and the former showed no inclination to go after records.

A few minutes before the hour for the opening race Earl Kiser with the *Bullet* came out for a warming up. He made one circuit at moderate speed and received a great ovation as he passed the stand. The spectators were listening to the musical selection being rendered, and Kiser was making his second round when, at about the center of the lower turn, the car was seen to swerve slightly from its course, and a second later it crashed through the fence on the inside. Jardine and McLaughlin in a Royal were not far behind, and quickly went to the scene of the accident. The *Bullet* had torn down more than seventy feet of fence and turned partially around, and the front wheels were buried to the hubs in the soft mud. Immediately the gasoline tank was crushed and the car became a mass of flames. Kiser was evidently struck by a post or cross piece of the fence, and the car going down the slight depression and stopping suddenly in the mud caused him to be thrown some ten feet from the car. Hundreds of persons hurried to his rescue, while others turned their efforts to extinguishing the flames in the burning car. A runabout brought two physicians to the scene and ambulances were called. Earl's left leg was found to be crushed to a pulp, and he was bleeding from a score of other injuries.

Among the first to reach the injured driver was Pat Hussey, Kiser's trainer in the old bicycle days. He did much to aid the physicians. It seemed an age before the ambulance arrived, and every now and then Kiser tried to sit up, saying he wanted to see his injured leg. Hussey held him down by main force, repeating several times, "It's all right, Earl; you have been hurt worse than this a number of times in the bicycle days."

He was hurried to the nearest hospital, and word was soon brought back to the anxious crowd that it had been found necessary to amputate the leg above the knee. His right shoulder was dislocated, and an arm broken, and he had received numerous wounds on his head and body.

After the wreckage had been cleared away it was decided to proceed with the races, and while some of the performances were interesting, all enjoyment had been swept away, not only by reason of Kiser's accident but also from the fact that there would be no chance for even competition in the big races, Kiser being considered the only one present who could compete evenly with Webb Jay and his White steamer.

Jay, of course, had things his own way in the heavy classes, but Herbert Lytle with the new medium-weight Pope-Toledo, and Charles Burman, with a stripped Peerless, afforded good sport.

The curtain raiser was for cars weighing 1,432 pounds, or less. There were but two entries—Lytle, Pope-Toledo, and Dan Wurgis, *Reo Bird*. Lytle took the lead from the start, and finished a quarter of a mile to the good. Time, 5:18 2-5.

In the five-mile race for stock touring cars there were three starters. W. L. Marr, Buick, led the first few miles, and then he was passed by R. E. Hawkins, Gaeth. Marr came up strong down the stretch and won by three lengths. Time, 7:25 3-5.

Next was the most exciting race of the day—the free-for-all for the Diamond cup. There were but three starters—Jay, Burman and Lytle, the latter appearing in a touring car in consequence of a slight accident to his racer. Lytle was, of course, left behind at the start, but to the surprise of every one Burman got a better start than Jay and opened up a wide gap. Burman seemed to be making the turns better, while Jay made gains on the straights. The duel down the stretch on the finishing mile was the most interesting event of the day. Jay won in 5:16.

There was considerable delay in starting the race for stripped touring cars. Burman, the Peerless driver, protested that Lytle's new Pope-Toledo was a racer and not a touring car. The Pope-Toledo people exhibited drawings of a touring car fitted with this same frame and mechanism, but that did not satisfy Burman. Referee George L. Weiss insisted that Burman should drive, stating that he would consider the protest later, to which Burman finally agreed. Lytle and Burman led the others from the start, the latter having the advantage for the first mile. Just after passing the stands on the second mile, Lytle shot in as they were making the turn, gaining the pole. The rules say that no driver shall take the pole from another unless he is two lengths ahead, and accordingly Burman entered another protest, claiming Lytle was not the required distance ahead. On the fourth mile Burman's car went bad, and Lytle won easily. Robert Jardine, with a Royal, was second. Time, 4:59 4-5.

WINTON BULLET AFTER ACCIDENT IN CLEVELAND IN WHICH EARL KISER LOST A LEG.

C. C. Ferguson won the club championship in a Pope-Toledo from M. B. Grover, in a Royal. Time, 6:27 3-5.

The first heat of the $500 Cleveland Club Derby was easily won by Webb Jay, who ran away from Lytle in a Pope-Toledo, the latter quitting in the fourth mile. In this event Jay made the third mile in 57 seconds, the fastest mile of the day. Time, 4:46 1-5.

The second heat of the Derby brought out only Burman and Wurgis. Wurgis set the pace for four and a half miles, and then Burman won. Time, 5:23.

As a special event, Lytle with his Pope-Toledo went after the five-mile record for cars of the 1,450-pound class, and succeeded in making it 4:57 3-5.

Monday's Events at Cleveland.

Special Correspondence.

CLEVELAND, Aug. 14.—About 2,500 attended the races Monday. Rain interfered with the pleasure of the day, keeping many away and stopping the races about the middle of the program. There were three quite exciting events. Four cars started in the five miles for touring cars with tonneaus and three passengers. Charles Soules, Pope-Toledo, and Robert Jardine, Royal, put up a pretty race for four miles, Soules leading nearly all the way but losing ground at every turn, only to gain it on the stretches. On the last mile Soules' car

Ned Broadwell, "Rain Maker," Who Has Spoiled Race Meets at Many Tracks and Whose Non-Attendance Cleveland Promoters Tried to Buy.

commenced missing fire, and Jardine passed him, winning by about 200 yards. Time, 6:05 1-5.

In the five-mile national championship there were four starters—Jay, Lytle, Wurgis and Burman. Wurgis had the pole. As usual, Jay got off fast, gaining about two hundred yards in the first quarter, with Lytle second and Burman trailing in the rear, his machine running badly. After a mile, however, he picked up in fine shape. On the third mile the steamer went bad and finally came to a stop, Lytle gaining a good lead over Burman, who had passed Wurgis. On the fourth mile Lytle's car commenced missing fire, causing him to lose speed, Burman overhauling and passing him. Burman continued to gain, and won in 5:15 4-5.

Barney Oldfield and the *Green Dragon* were greeted with rounds of applause when he came out for the five-mile exhibition for Kiser's benefit. With his head bandaged and a broken bone in his shoulder, which he had declined to have set until he could give this exhibition, Barney was in no shape for record-breaking work. He scored the fastest five miles of the meet, though he did not come near the record. Time, 4:45 3-5.

Two events were omitted, and the final of the ten-mile Cleveland Derby was made five miles, as it had started to sprinkle. In order to make it interesting, there being but two starters, Jay simply toyed with Burman, allowing him to gain and then running away from him as he pleased. A few seconds after this race was completed it commenced to pour, and the remaining events were called off.

This afternoon it was announced that Kiser's wounds were healing as well as could be expected, and that he would probably be able to leave the hospital in two or three weeks.

A number of prominent automobilists met here this morning to arrange for the benefit meet which Oldfield offered to hold for Kiser. The meet will be held at Dayton, Kiser's home city, either August 26 or September 2. A number of prominent drivers have agreed to compete, giving their services for the benefit of their friend, among them being Webb Jay, Charles Burman, H. H. Lytle, Carl Fisher and Robert Jardine.

Buying Good Roads with Drinks in Kansas.

Special Correspondence.

KANSAS CITY, Aug. 11.—Every time you take a drink in Kansas City you help the cause of good roads. Zeal for good roads should not be an excuse for increasing the patronage of the 600 odd saloons in the city. But the fact that Jackson county, in which Kansas City lies, either has a population anxious for good roads or that its climate is very conducive to thirst is shown by the amount of money spent on macadam roads alone in the last ten years. This aggregates the considerable sum of $1,569,000, and the saloons pay the bill.

Since the present "dramshop law" was enacted, Jackson county has built approximately 400 miles of good macadam roads, at an average cost of $4,000 a mile. This means an expenditure of $1,600,000 drawn from a community whose population does not exceed 300,000.

If one looks at the map of the county, it will be seen that the roads radiate to all points and touch all of the more important towns. Often they make "jogs" for unapparent reasons. The roads have, nevertheless, been built with a definite system in mind, despite a certain kind of "grafting," and eventually all roads in the immediate vicinity of the city will be macadamized, so that the country will be more like the cities. Further away the plan is to build and connect long arteries, which the farmer, bound for market, can reach after a short drive over the ordinary earth roads.

Each dramshop in Jackson county pays a county license of $500 a year, in addition to the city license. Two-thirds of the county tax goes into the special road fund, from which is drawn the money to build macadam roads. Every saloon, therefore, contributes $333.33 each year to make travel easier for conveyances, even if it may not have the same effect on the individual.

The amounts spent on macadam roads each year since 1895 are as follows: 1895, $90,000; 1896, $146,000; 1897, $129,000; 1898, $126,000; 1899, $177,000; 1900, $139,000; 1901, $139,000; 1902, $157,000; 1903, $182,000; 1904, $190,000; 1905 (to date), $94,000.

In addition to this amount, the general road tax of 15 cents on the $100 valuation is spent in improving the highways. This latter fund, however, is used exclusively for dirt roads, and hence is not included in the totals given above. This tax for 1903 amounted to $28,641.02, and has been in the neighborhood of $25,000 for five years or more.

The working of the dirt roads, while hardly so satisfactory as it might be, still compares favorably with similar work in other states. The money is spent under the direction of road overseers, who take considerable pride in their districts. As a result the dirt roads are generally passable, and if they are not kept in good condition complaint is made at once, for the farmers realize that they are paying for good roads and they intend to have them.

One great help to the tourist, and to anyone who finds bridges or their approaches in bad condition, is the fact that all these structures are numbered. If one is in bad repair it can be reported to the county court by number. This method is very simple, and does away with much red tape in connection with the maintenance of the roads and bridges.

Its roads are a source of pride to Jackson county. The fight may have been somewhat hard at first, but the absolute success of the "rock road" has turned every inhabitant of the county into a good roads advocate.

In long white lines, radiating from almost every town, these macadam roads cross and recross the county. They are not wide; the standard gauge is but sixteen feet, except on curves and dangerous places, where sufficient room is given to provide for possible accidents. But as a general thing there is just room enough on the roads for two vehicles to pass comfortably. Usually there is a grassy slope on each side, which acts as the best possible kind of drainage ditch, preventing water from washing away the sides of the road surface.

In other places dirt roads flank the macadam, so that the tired trotters can rest their feet on the soft soil. Such places have, of course, no particular interest for the motorist, but they double the width of the road in dry weather.

Grosse Pointe Two-Days' Racing.

Special Correspondence.

DETROIT, Aug. 10.—It was not an Oldfield meeting at Grosse Pointe this year by a good deal. Oldfield has ever been the auto idol of the Detroit public, but this time he fell from the pedestal. The first day of the meet he was badly beaten by Webb Jay in the White racer, and on the second day an accident threw him through the fence and deposited him in Harper Hospital. That Oldfield was not seriously injured—and also Dan Wurgis, the driver of the Reo *Bird*—is little short of a miracle, but within three days Barney was well enough to leave the hospital.

The Grosse Pointe meet this year was a big success considering that rain forced a postponement from Friday and Saturday, August 4 and 5, to the following Monday and Tuesday.

Good weather favored the racing Monday, and more than 5,000 spectators gathered at the track. It was the last event of the day, the Oldfield-Jay struggle, that held them; but the *Green Dragon* was too slow for the *White Ghost,* and Barney was beaten in a walk in 9:36 3-5 from a flying start. For the first six miles Oldfield put up a game fight. Jay kept well out and let Oldfield hug the rail all the way around. Up and down the stretch Jay would gain handily, but on the turns Oldfield would close up a little with his reckless taking of the corners. But the speed was with Jay, and Oldfield was at the three-quarter pole when Jay finished.

The five-mile open for cars of 1,432 pounds brought out three starters—George Soules, with a Pope-Toledo; Dan Wurgis, with the Reo, and Fred Tone, with the Marion. Wurgis took the lead at the start, but at the completion of the first mile was being overhauled by Soules when the Pope-Toledo began having engine trouble, and Wurgis had it all his own way to the finish.

There was a great finish in the five-mile open for stock touring cars with tonneau, guards and hood, listed at $1,500 and under. Breed, in the Buick, took the lead at the start and held it well for several laps, increasing steadily. The Queen car dropped out with poor ignition, and at the end of the second mile Scheuffler, in a Jackson, began to creep up and overcome Breed's long lead. He gained steadily to the end of the fifth mile, when the cars came down the stretch together. The Jackson had the finest burst of speed, and crossed the tape half a length to the good. It was one of the cleanest races ever seen on the local track.

In the first heat of the five-mile $500 trophy race Oldfield won from Burman, who also drove a Peerless, by half a length, and in the second heat Webb Jay won from Wurgis easily by a quarter mile, doing the last two miles with the steam throttled. Burman, in the Peerless, won from the Soules boys in the third heat. There was a little bad feeling in this event, as the Soules brothers had protested the Peerless earlier in the day, the protest not being allowed by the judges.

On the second day the Oldfield-Wurgis accident occurred in the first mile of the five-mile open, at the three-quarter turn. The race brought out four starters—Barney and his racing partner, Burman, in Peerless cars; Webb Jay, in the White, and Wurgis, in the Reo. Jay had pulled out a good lead in the backstretch, and Oldfield was opening up on the other two, hugging the rail at the turn, when his engine failed, and the *Green Dragon* slowed down quickly.

Wurgis and Burman, coming at less than a mile-a-minute clip and intent on the turn, did not notice this until they suddenly came upon Barney. Wurgis, who was on the inside, was pocketed, with Burman on his right. He swerved out to pass between Oldfield and Burman, but the opening was not big enough, and his rear wheel caught the rear wheel of the *Dragon* and twisted the car around into the fence. A tremendous cloud of dust arose, and Oldfield was shot up into the air and thrown twenty feet over the infield fence. His car crashed through the fence and down into the ditch, a dilapidated wreck of its former self. Wurgis swerved across the track and crashed through the outside fence and into a sulky that stood near the stables. He was not hurt and drove his car into the paddock. The management had fortunately provided an ambulance, and Oldfield was hurried to Harper Hospital, where he soon recovered.

Earlier in the day Oldfield and Jay had had a hot fight in the Diamond cup race, Jay winning in the fast time of 4:52 4-5, the fastest mile being in 57 4-5 seconds.

Summaries for both days follow:

First Day.

Five-mile open, cars under 1,432 pounds.—Dan Wurgis, Reo, first; George Soules, Pope-Toledo, second; Fred Tone, Marion, third. Time, 5:40 1-5.

Five-mile open, stock touring cars listed at $1,500 and less.—E. F. Scheuffler, Jackson, first; G. Breed, Buick, second; Holloway, Elmore, third. Time, 7:31.

Five-mile motorcycle handicap.—Hamilton Carhartt Jr. (scratch), first; Oscar Kratz (30 seconds), second; T. B. Chadwin (45 seconds), third. Time, 7:33 2-5.

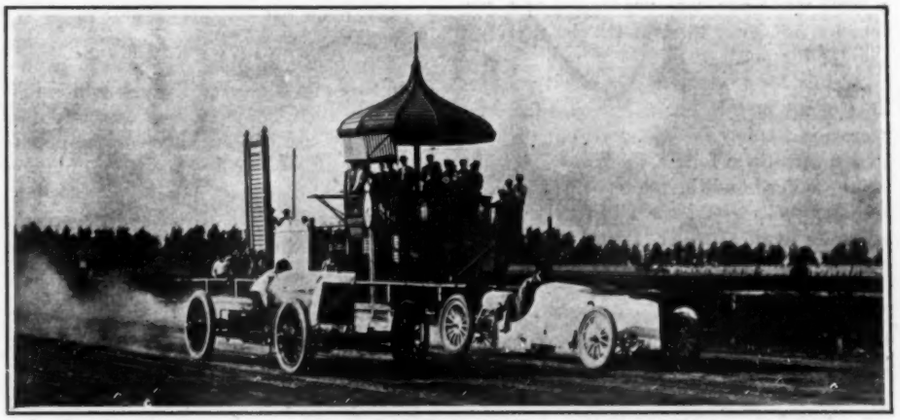
Five-mile race for $500 trophy, first heat.—Barney Oldfield, Peerless *Green Dragon,* first; Charles Burman, Peerless, second. Time, 5:20 3-5. Second heat—Webb Jay, *White Ghost,* first; Dan Wurgis, *Reo Bird,* second. Time, 5:15 4-5.

Five-mile open, stock touring cars, stripped.—Charles Burman, Peerless, first; Charles Soules, Pope-Toledo, second; George Soules, Pope-Toledo, third. Time, 5:15 2-5.

Ten-mile open.—Webb Jay, *White Ghost,* first; Barney Oldfield, *Green Dragon,* second. Time, 9:36 3-5.

Second Day.

Five-mile open, cars under 1,432 pounds.—Dan Wurgis, Reo, first; George Soules, Pope-Toledo, second; Fred Tone, Marion, third. Time 5:28 4-5.



JAY AND OLDFIELD STARTING IN DIAMOND CHALLENGE CUP RACE AT DETROIT.

Five miles for Diamond Challenge Cup.—Webb Jay, White, first; Barney Oldfield, Peerless, second. Time, 4:52 4-5.

Five-mile open, stock touring cars listed at $1,500 and less, complete with tonneau, guards and hood.—G. Breed, Buick, first; Reliance, second; Holloway, Elmore, third. Time 8:11 2-5.

Five-mile open for purse of $150.—Webb Jay, White, first; Charles Burman, Peerless, second. Oldfield and Wurgis did not finish. Time, 5:21.

Five-mile open, stock touring cars, stripped.—George Soules, Pope-Toledo, first; Fred Tone, Marion, second; E. F. Scheuffler, Jackson, third.

Five-mile trials against time.—Charles Burman, Peerless; time 5:12 2-5. Webb Jay, White, did not finish.

Ten-mile motorcycle handicap.—Kenneth Crittenden (1:30), first; Walter Blackwell (1:30), second; Oscar Kratz (30 seconds), third; Hamilton Carhartt, Jr. (scratch), fourth. Time, 18:16.

Would Study Conditions Threatening French Industry.

A proposal to hold a "congress of experts" in Paris for the purpose of studying the conditions that confront the French automobile industry and of finding means for improving them is made in an article entitled "The Automobile in Danger," published in a recent issue of *Le Matin*, a French political and slightly sensational daily newspaper that is highly in favor of the automobile. The article sounds a note of warning to the French manufacturers by pointing out the rapid advancement in automobile manufacture in the United States, England and Germany, and attempts to give some timely advice. As *Le Matin* has recently arranged to secure the telegraphic service of the *Sun* for its American news, what it has to say with regard to the industry in America is of especial interest.

Freely translated, the article to which reference is made reads as follows:

"The long and disastrous strike of the carriage body workers, which ended only a little while ago, was productive of a few lessons which we think it will be useful to point out.

"While for weeks our best metal workers and all the men in our automobile factories were threatening to quit work out of sympathy with their fellow workers, and while on the other hand the makers threatened to transfer their factories out in foreign countries to avoid further labor troubles, it occurred to us that a congress should be organized to determine the extent of the danger that really threatens our national industry and also the means of combating it.

"Because our exports last year reached the amount of 74,000,000 francs, we seem to believe that we have conquered the whole earth; that we now are unbeatable in any kind of market; that our superiority would seem to have been recognized everywhere, and we would not have anything more to fear from foreign competition.

"Such is not altogether the case.

"At the last New York show, that where the American-made cars were exhibited, it was shown that that country was endeavoring by every possible means to take the very first place in the industry; the American cars, certainly, did not have the finish, the refinements, the beauty and the proportions of our own, but their prices were very much below ours. Our makers were simply stupefied, for where we have mostly cars which are listed at 15,000 francs ($3,000), machines were to be found that were offered for 5,000 francs ($1,000) at New York.

"Is it any wonder, then, that the automobile factories should grow in that country in a most vertiginous way, and that they should have made, in 1904, 10,000 more machines than ourselves? At the Chicago show two French machines were shown; all the others, out of three hundred and fifty, were American made.

"If from America we pass to Germany and England, we certainly must admit that the last London and Berlin shows were marvelous.

"England, to whom we sold in 1904 50,000,000 worth ($10,000,000) of automobiles, is being agitated by the press, and wants to manufacture her own cars and cease buying from us. The English have the advantage over us of making some very cheap types of machines, cars being found in all catalogues that list near 2,500 francs ($500).

"Our makers make the mistake of catering too much for the richest trade and thus restrict their own market. Not only do we seem to despise the cheaper machines, but further, we do not seem to want to hear anything of the commercial vehicle. In London, several omnibus lines are running with the greatest success, and in every industrial town in Great Britain a number of industrial motor vehicles are to be found, while we have only a few solitary samples running in Paris.

"We have not only to fight against the foreign makers and their clever ways, but we also have to fight against the foreign governments and the careful watch which they keep on their subjects' interests. In that respect we are badly protected; we do not defend ourselves well. Young as it may be, the French automobile industry already suffers from routine—its own, and that of the government. The law obliges us to follow the rules of the road contained in regulations issued as far back as 1851 and 1852, while the present conditions cannot be compared with those of that time.

"The taxes are also a heavy burden; a mere 14-horsepower car, which is a very reasonable power, pays 320 francs ($64) in Paris, while considering that cars are frequently sold and bought second-hand, and that the new owner has to pay the tax again for every month of the year that is not passed, it happens that in a twelvemonth as much as four or five times the legal yearly tax has been paid on the same car.

"Passing to other conditions, gasoline costs 12 cents a litre in Paris, while it is sold at 2 3-5 cents in Brussels and hardly anything in America. [?]

"It will be necessary for a congress to determine the best ways of altering these conditions and bringing about others which may be found necessary to the industry. It will also be necessary to find openings for our output.

"In United States the manufacturing facilities appear to be not over 20,000 cars a year, while the demand is for well over 30,000; the margin is still a handsome one.

"In Canada, the French Chamber of Commerce stated that if the French makers would unite in an effort to open, at common expense, a general depot, it would find a large number of buyers.

"Two points, however, are to be observed:

"1st—The foreign agencies must be selected and organized with all possible care and guarantees.

"2d—The vehicles must be so adapted that they will stand up well under the special requirements of each country."

After going into other details of less interest, the French paper comes to the conclusion that a congress of experts to study the conditions in favor of and against the French industry is necessary, and offers its services and the use of its buildings for the purpose and offers to open a credit or subscription toward the expenses.

Hardly any comment is necessary upon these remarks, although it should be remembered that the successful commercial vehicle competition just held in Paris will alter considerably some of the views expressed.

Plans for Paris Salon.

Special Correspondence.

PARIS, Aug. 5.—Preliminary work has already been begun on the eighth annual Paris Automobile Show for next December, an advance prospectus having been sent out this week. As in 1904, the show will be held in the Grand Palais on the banks of the Seine, with an annex in the "Serres" (or municipal conservatories) for motor boats and industrial vehicles. Notwithstanding every available inch of space was occupied last year, and the question of a larger building was discussed, no change of locality has been made. The only other available building is the vast Galerie des Machines, on the Champ de Mars. Although this would give more than the necessary amount of space for the entire exhibition, it would, on account of its distance from the center of the city, be prejudicial to the social standing of the Salon—a matter of too much importance to be neglected.

The date of the show is from December 8 to 24, no change having been made in this respect, notwithstanding the discussion which took place immediately after last year's Salon, and the change of date of the London shows with the object of stealing a march on Paris. The promoters of the Paris Salon are somewhat handicapped, for the Grand Palais is under the control of the Fine Arts Society, which, owing to its own exhibition, can lend it to the Automobile Club only for the month of December.

The roster of the organizing and executive committees does not reveal many changes. Baron de Zuylen, president of the Automobile Club of France, remains honorary president of the Salon. The vice-presidents are the Marquis de Dion, M. Darracq and M. Poirier. Fourteen members of the organizing committee are nominated by the Automobile Club of France, thirteen by the Chambre Syndicate de l'Automobile, eleven by the Cycle and Automobile Syndicate, and eight by the Syndi-

cate of Cycle Manufacturers. Monsieur Rives, who has had such an honorable connection with the Paris shows, remains president of the Executive Committee and Commissaire Général.

In order to recompense the longer established firms that have contributed by their initiative to the advancement of the automobile industry, a certain number of stands in the central nave will be reserved. These stands, which will be let at a special price, will be chosen by the drawing of lots, and given to the French constructors gaining the largest number of points as follows: For seniority as constructors of automobiles, 5 points for each year of existence; for participation in competitions organized by the Automobile Club of France or the French Government, 3 points for first place, 2 for the second, and 1 point for the others; the same number of points are also given for participation in races organized by the French Government or the A. C. of France; participation in the annual exhibitions of the A. C. of France gives 5 points for each year, and the same number is given for the automobile sections of governmental exhibitions; 3 points per year are given for foreign exhibitions (automobile section) recognized by the French Government. Rewards gained in the French annual exhibition, in governmental shows, and in officially recognized foreign shows, will give 5 points for the members of the jury, and for winners of first class prizes, 4 points for second class prizes, 3 for third class, 2 for fourth class, and 1 for fifth class. The total number of points gained will determine those who are entitled to draw lots for the positions of honor.

Fifteen classes of exhibits are provided for, beginning with Class I for automobile vehicles, motorcycles and all forms of mechanical traction, and ending with literature, photography, maps, books, newspapers, etc.

Blackpool Speed Trials.

Special Correspondence.

LIVERPOOL, Aug. 4.—New records were established at the two-days' race meet at Blackpool last Thursday and Friday, July 27 and 28. Clifford Earp, driving a 90-horsepower Napier, succeeded in tying the world's record of 104 1-2 miles an hour, and Henri Cissac, the French motorcyclist, lowered his record figures, made at Brighton the week before, to 50 1-5 seconds for the flying mile, and 25 3-5 seconds for the flying kilometer. Cissac rode his 14-horsepower Peugeot.

The first events on Thursday were scratch races for cars in racing trim costing less than £1,250 and £1,500, respectively. The twenty or more cars competing included all the best-known types—Mercedes, Leon Bolleé Itala, Darracq, and the like—but in each case the winner turned out to be Mr. A. Birtwistle's 35-horsepower Daimler. No less than five of these cars were entered. The winner's speed over the mile and a half course from a standing start was a little more than seventy miles an hour. A Daimler also took second place in each event.

The well-known French record-breaking motorcyclist, M. Cissac, next made an attempt on the world's records for both the mile and kilometer. The machine was a 14-horsepower two-cylinder Peugeot—purely a speed monster, which would not survive many miles of ordinary road.

After several misstarts Cissic got away, but could not do better than 27 3-5 for the kilometer and 54 4-5 for the standing mile. On covering the course in the reverse direction, however, the kilometer was passed in 25 3-5 seconds (87 1-2 miles an hour) and the standing mile in 50 1-5 seconds (71 1-2 miles an hour), both of which are world's records.

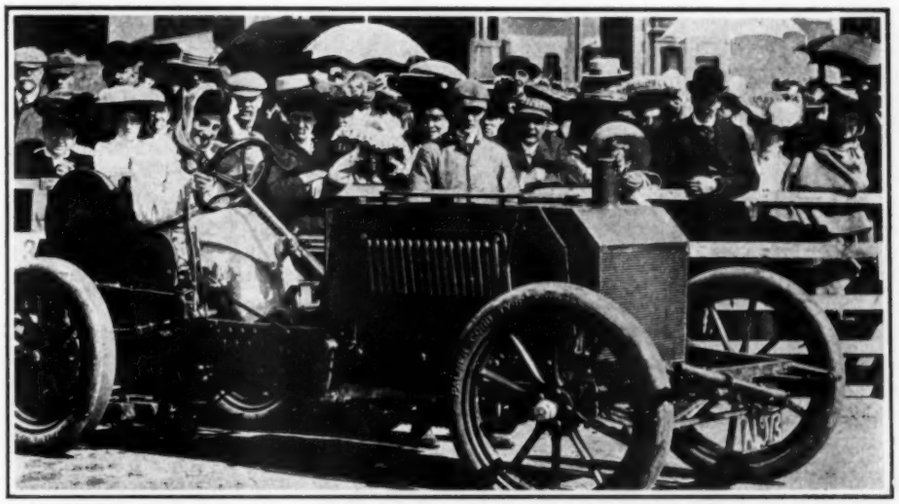
A scratch race for racing cars less than 1,000 kilograms limit was next run over the flying mile. The cars run singly and the average of these runs was taken. As was expected, Earp, on the well-known six-cylinder Napier, was first, with an average of 38 1-5 seconds for the mile. Lee Guiness, on the 100-horsepower Darracq, averaged 88 1-2 miles an hour, while Cagno, on one of the 100-horsepower Fiats that competed in the Gordon Bennett race, only managed to make 76 1-2 miles per hour, carbureter trouble being given as the reason. Miss Dorothy Levitt had a lot of trouble from dogs straying in the course, and her 80-horsepower Napier only averaged 69 miles an hour.

The second day's events proved more exciting. After a handicap race for Darracq cars, the 8-10 four-cylinder Humber won the Lancashire Club handicap. The races were over the flying kilometer, and in the class for stripped touring cars of less than £1,250, Percy Martin took first place with a 35-horsepower Daimler, in 30 2-5 seconds, or about 73 miles an hour. A 70-horsepower Darracq was second, in 30 4-5 seconds. In the next event, these positions were reversed, the Darracq improving to 29 4-5 seconds, while Martin's Daimler was second.

The principal event of the day was the attempt at the flying kilometer record by the racing cars. As a special incentive the Blackpool authorities had offered a £100 prize for the best speed above 95 miles an hour, and £250 if the world's record was broken. Out of ten entrants only three started—Earp, Guiness and Moore-Brabazon. In the actual event, Earp won in 22 4-5 seconds; Guiness took second place in 24 2-5 seconds; and Brabazon, on a Mors, 26 seconds. Earp was not satisfied with his speed and made three more runs, trying the course both ways. On the first attempt he scored 21 3-5 seconds. The second time the world's record of 21 2-5 was equaled. He was unable to pass this, and his third run fell to 22 seconds.

Since the races at Blackpool in October last, the corporation of this go-ahead English seaside resort built a new two-mile promenade along the shore, and it was decided that the most auspicious way to open this new track was by means of an automobile race meeting. As all classes of touring cars were catered for at Brighton last week, the Automobile Club decided to limit the present events to racing and stripped touring cars.

The spectators were very much bored by the lax manner in which the events were run off, and so much ill feeling was aroused that it is not likely that another race meeting will be held at Blackpool for some time to come.



MISS DOROTHY LEVITT IN HER NAPIER CAR—COMPETITOR IN BLACKPOOL RACES.

ENGLAND QUITS GORDON BENNETT

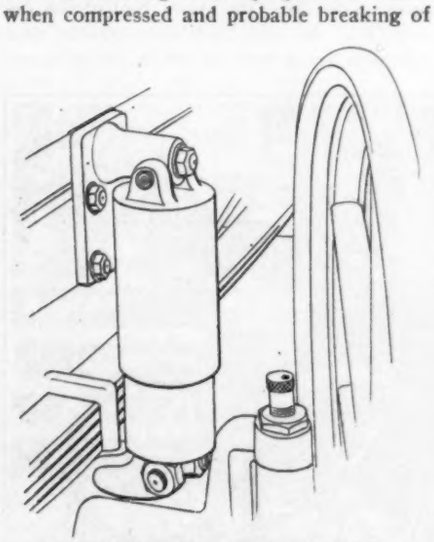
Special Correspondence.

LIVERPOOL, Aug. 4.—The Automobile Club of Great Britain and Ireland has decided not to challenge for the Gordon Bennett cup race in 1906. No statement has yet been made public giving reasons for this decision on the part of the club, but an early explanation is expected.

George Freeman has the fever and may buy an automobile.—*Anderson (Ind.) Bulletin.*

New Shock Absorber.

When the spring maker undertakes to produce a set of good springs for an automobile, he sets himself a difficult task. The weight to be carried is not only heavy, but is certain to vary between wide limits; yet he must, if he can, provide springs that will make the car ride comfortably under all conditions of load. Again, the speed of the car will vary greatly, and the action of a spring when the car is running fast is quite different from its action when the car is running slowly. If the spring is heavy and stiff, the car will, of course, be most uncomfortable to ride in; whereas, if the spring is light and flexible, the car will ride beautifully at slow speeds and on ordinary roads; but at high speeds and on bad roads the play of the springs will be excessive, resulting in bumping on the axles when compressed and probable breaking of



SHOCK ABSORBER ATTACHED TO CAR.

the springs on the rebound. To make possible the use of flexible springs a number of devices have been brought out, all having for their object the retardation of the extremes of spring motion by some sort of cushioning or shock-absorbing device. The number of such shock absorbers, as they are generally called, that are in use is evidence of the necessity for their use. One of the most recent shock absorbers is the Kilgore air cushion, manufactured by the Kilgore Automobile Air Cushion Co., P. O. Box 820, Buffalo, N. Y. This appliance consists essentially of a cylinder in which works an air-tight piston; the cylinder is attached to the axle and the piston to the car frame, suitable brackets being provided for the purpose. Universal joints are applied at the points of attachment, so that movements in all directions are provided for. A cap or casing is made integral with the piston or plunger; the cap fits closely outside of the cylinder, excluding dust, while the piston fits within the cylinder. The cylinder is said to contain sufficient lubricant for 10,000 miles ordinary running. As long as the car fitted with these cushions is running over ordinarily uneven roads, the springs will move freely, the elasticity of the air in the cylinders being sufficient to permit this. If a rougher road is encountered, or if the speed of the car is so increased as to magnify the effect of the rough places, the air cushions will take the shock when it becomes too severe for the springs, and bring the car body to rest gradually and without damage to the springs, whether under compression or on the rebound. The comfort of the passenger is not the only important consideration; for the more easily the car rides, the less severe will be the wear and tear imposed on the machinery.

MAKES PARTS ORDERING EASY.

One of the cleverest and most sensible ideas with regard to trade literature that has come to attention in a long time is embodied in a plain and unassuming little booklet of ninety-six pages recently issued by the Maxwell-Briscoe Motor Company, of Tarrytown, N. Y. Its purpose is to make the ordering of duplicate parts for replacement in Maxwell cars a very simple matter, whether by letter or telegram. Owing to the variations in nomenclature of the various parts of automobiles, this is usually attended with considerable uncertainty, delays and very frequently by misunderstanding. Use of the booklet mentioned, by the owner of one of these cars—or by the repairman ordering extra parts—should wholly obviate such annoyances.

The sample page of the book reproduced herewith shows the arrangement of all. Every separate part or piece of the cars manufactured by the company, no matter how small and insignificant or how large and costly, is represented by a drawing in the first column, and in succeeding parallel columns are given its serial number, the name of the part, the shop number, the material of which the part is made, the number of such parts required for a car, and the price of the part. The parts are properly classified and related so that one does not need to hunt all through the booklet to find the part he wants.

MODEL-H
ENGINE & TRANSMISSION PARTS

SKETCH	SERIAL NO.	NAME OF PART	PART NO.	MATERIAL	PARTS REQD	PRICE EACH
	156	CONNECTING ROD	H-17	MALL. IRON	2	
	157	CONNECTING ROD CAP	H-18	MALL. IRON	2	
	158	CONNECTING ROD CAP SCREW	H-19	⅝" × 1¾" CAP SCREW	2	
	159	CONNECTING ROD CAP PIN	H-20	C.R. STEEL	2	One Set Complete $6.00
	160	CONNECTING ROD SCREW, PISTON END	H-21	⅝" × 1⅛" CAP SCREW	2	
	161	CONNECTING ROD BUSHINGS	H-487	BRONZE	2	
	162	CONNECTING ROD BUSHING SCREWS	H-488	BRASS	4	
	163	PISTON	H-13	CAST IRON	2	6.00
	164	PISTON PINS	H-15	STEEL	2	.15
	165	PISTON PINS SET SCREWS	H-16	⅜" × 1" SET SCREW	4	.05
	166	PISTON RINGS	H-14	CAST IRON	6	1.00
	167	PISTON RING PINS	H-49	⅛" STEEL	6	.05
	168	PISTON OIL TUBE	H-48	¼" TUBE BRASS	2	.10
	169	PISTON PIN SET SCREW NUT	H-638	¼" HEX NUT	4	.05

PAGE FROM DUPLICATE PARTS CATALOGUE.

A scant two pages of the book are devoted to brief and necessary comment and two more to drawings of the chassis of the runabout and touring car made by the Maxwell-Briscoe Company, the remaining ninety-two being devoted exclusively to descriptions of parts, like the page reproduced.

Though a beautifully simple scheme, and one that does not look very costly, each page is done entirely by hand, from the minute drawings of the different parts to the lettering, making the expense much greater than that of a more handsomely illustrated and printed catalogue. Nevertheless, the work will be appreciated by users of these cars, and it shows how a manufacturer can help his customers and agents if he will.

Arrival of Monsieur and Madame Dupont, of Paris, in their automobile to make a visit to their last born, put out to nurse in Bouzy-le-Tetu.—From *Sans-Gene.*

NEW LITERATURE.

Ohio Highway Bulletin.—Bulletin No. 2 of the recently created Highway Department of the State of Ohio, issued last June, is a pamphlet of twenty pages on the "Construction of Country Roads," by Sam Huston, state highway commissioner. The monograph deals with the location, drainage, foundation and surfaces of country roads. In treating of surfaces, the paper subdivides the subject into clay, gravel, and broken stone surfacing, and the writer gives many useful observations with regard to the construction of each, its durability, the proper materials to use and experiences with such roads in different parts of the country. Though brief, the treatise should be of interest and value to persons everywhere who are contemplating the improvement of country roads.

Letter Box

Steam Car with Double Power Plant.

Editor THE AUTOMOBILE:

[244].—No one, so far as I know, has ever built an automobile on any other principle than that of "putting all the eggs in one basket," so I determined to build a steam car myself with a double power plant, so arranged that if half the plant got out of order I could run with the other half. I carried out my intention, and the photograph which I send shows the appearance of the finished car.

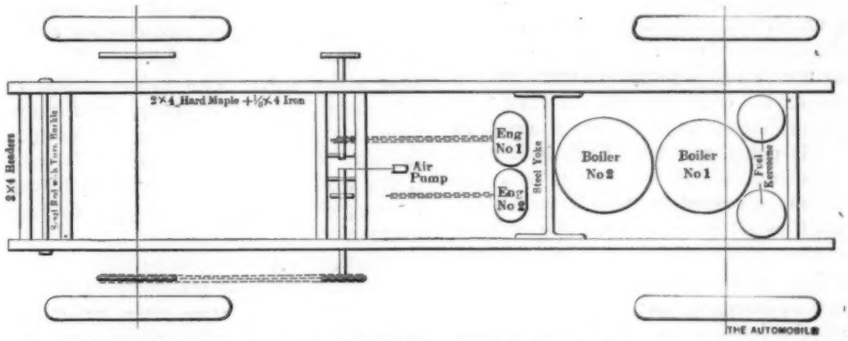
The machine has never been towed home, nor anywhere else, for that matter; but on a few occasions, when the car was new and everything not yet working perfectly, I have run as much as ten miles on one engine, stopping only long enough to get out and close a valve; the other occupants of the car knew nothing of the omission of half the propelling power. I have, however, towed others who have got into trouble, and one man was good enough to tell me, after I had pulled him nine miles, that he really had gotten home quicker than he would have done if he had not broken down.

The power plant consists of two Tonkin boilers fired by "Lightning" kerosene burners, and two engines. One engine drives to each rear wheel, no differential gearing being used. The main steam pipes are connected by a 3-8-inch cross pipe, which has the effect of equalizing the steam pressure in the two boilers. The two throttles are connected to one lever, and the links to one reverse lever, so that the control is the same as with a car having a single power plant.

One of the objects I had in view in building this car was to get a machine in which all the machinery should be accessible from above, and all thoroughly protected from dirt. Absolutely the only parts of the driving mechanism of this car that are exposed to dust and dirt are the two side chains and their sprockets. Boilers, burners, engines, pumps (both water and air), and everything else connected with the power plant, are protected by a long galvanized sheet-iron pan, nearly eight feet long, which not only protects the machinery, but, being very stiffly braced, stiffens the whole vehicle and also makes a fine support to which pipes can be attached. It is a decided addition to the appearance of the car. Nearly everything used in its construction was purchased from parts manufacturers. The car is a practical machine, and of very high grade throughout.

The frame is of hard, white Michigan maple, 2 inches thick and 4 inches deep, flitched on the outside with iron plates the same depth as the frames and 1-8 inch thick, fastened every 8 inches with 5-16 inch bolts. The side frames are tied together with 3-4 inch steel bolts with turnbuckles, each bolt pulling against two maple cross frames, the ends of which are let into the main frames 1-8 inch to avoid twisting. In addition to the bolts and cross frames there is a cross piece of iron 1-2 inch thick and 1 1-2 inches wide, with plates at the ends which are bolted to the insides of the side frames. This iron cross member supports the engines, top and bottom, as well as the rear of the rear boiler, and to it is also fastened the rear end of the galvanized iron pan. It also adds greatly to the stiffness of the frame. The vehicle has a wheelbase of 108 inches; the wheels are 34 inches in diameter, and are fitted with 4 1-2 inch Continental tires all around.

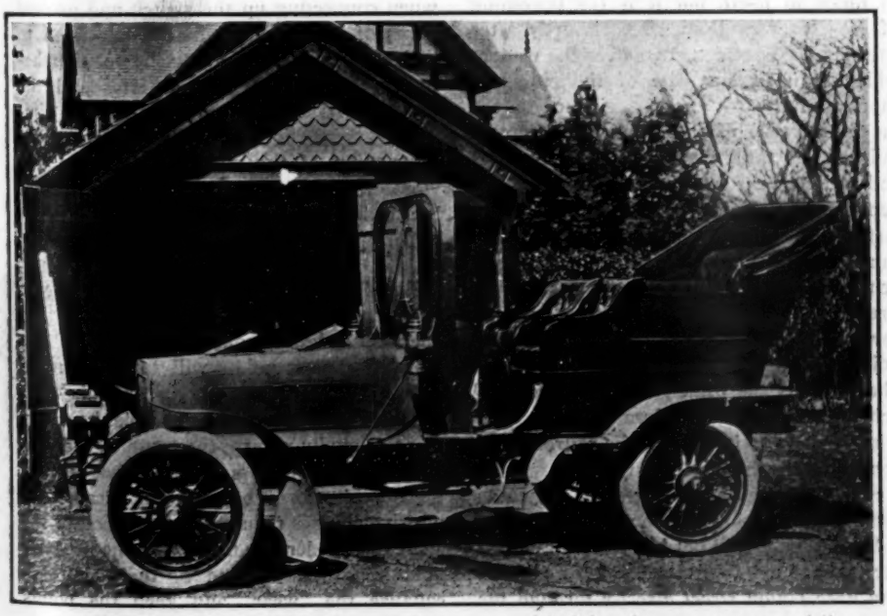
As the plan sketch shows, each engine drives to a separate countershaft by chain, and two more chains drive from sprockets on the countershafts to sprockets on the rear wheels. The chains from the engines to the countershafts are 1-inch Whitneys, while the main driving chains are heavier, being 1 1-4 inch, of the same make. The difference in sizes is due to the fact that the engine chains are entirely protected from dust, and are easily kept well lubricated, while the others are outside where they are exposed to the dust, and consequently require a greater wearing surface.



PLAN DRAWING OF SEELY CAR, SHOWING LOCATION OF BOILERS AND ENGINES AND DOUBLE DRIVE ARRANGEMENT.

The boilers are 16 inches in diameter, and have 400 tubes 18 inches long—5 inches longer than is usual in boilers of this diameter. This extra 5 inches gives a great deal more room for steam, allows a higher water level, and, of course, permits more heat to be absorbed from the fire than would be the case with shorter tubes. The products of combustion are discharged downward under the car. There are caps or lids in the tops of the smoke boxes, and these caps can be reached through doors in the top of the hood. When starting the fire the caps are removed to allow the smoke to escape until there is sufficient steam pressure to start the blowers, which are simply small needle valves supplied with steam from 1-8 inch pipes, outside diameter. The exhaust is not used or needed for this purpose when running.

I do not use a condenser. The cardinal points of my car are simplicity, reliability and comfort, and I care more about getting forty or fifty miles out of my car in comfort than two or three times that distance wrapped up in dust coats or smothered with dust. The meaning of this last statement must be explained. I use my exhaust steam



F. L. SEELY'S HOME-MADE STEAM CAR WITH DOUBLE POWER PLANT.

for keeping the dust out of the car, and this it does to perfection. Polished brass pipes lead from the engines to points just in the rear of the driving wheels, where the exhaust is discharged. So effective is this method of dust prevention that after a run of 100 miles over dry roads the dark green broadcloth lining of the Victoria top does not need the touch of a brush; neither does the cloth with which the seats are upholstered, and there is barely enough dust on the back of the body to show a mark when the finger is passed over it. Ladies riding in the tonneau find that no protection from dust is required. I value this feature much more than the fuel and water economy gained by the use of the condenser.

The kerosene tank holds 20 gallons. An air pressure of 80 to 100 pounds on the fuel is maintained without the slightest difficulty by the use of a little pump run from the end of one of the countershafts. A little heel button projecting from the floor serves to start this pump running. Each boiler has its individual water feed pump, and the water supply is regulated by a by-pass valve operated by a lever between the divided front seats, where the throttle and reverse levers are also located. There are no levers in exposed places, as there are in most cars.

A mechanical lubricating oil pump located on the dash is ratchet-driven by a rod actuated by one of the engine pump levers, and separate sight feeds are placed in plain sight of the driver. A double steam gauge —that is, one with two hands on the same dial—and a small air gauge complete the dashboard equipment. Two gauge glasses 8 inches long are located one on each side of the engines, at the driver's feet. A single rod reached from the seat controls the fire in both burners simultaneously, and little handles from the blower needle valves are placed in front of the driver so that drafts can be regulated to a nicety.

It is perhaps needless to say that with this power plant the car is a wonderful hill-climber and very fast. It is most luxurious to ride in, and is easily handled. I find that it is economical to run, and stands up well on the road, its substantial construction making it a machine that will not soon shake to pieces. F. L. Seely.

Princeton, N. J.

We Stand Corrected.

Editor The Automobile:

[245.]—On page 137 of your issue of August 3, 1905, you refer to a certain word as of Flemish derivation. For the vindication of the Dutch language, I will state that *Snelpaardeloozonderspoorwegpetrooiryting* is genuine imported Dutch, and, far from being unpronounceable, is very pronounceable—for a Dutchman. Several mistakes have been made in copying the word. Here is the right spelling, and the right explanation thereof:

Snelpaardelooszonderspoorwegpetroolryting: "Snel" means rapid; "paardeloos" means horseless; "zonderspoorweg" means without rails (not without sails; the word is describing an automobile, not an airship); "petrool" means petroleum; "ryting" means carriage.

Should you in the future require the services of an expert on Dutch, I offer my services free of charge. J. H. M.

Tampa, Florida.

Albany-Schenectady Road Directions.

Editor The Automobile:

[246.]—The most-used route between Albany and Schenectady, seventeen miles west on the direct road to Buffalo, is at the present time impassable or covered, if at all, with great difficulty by autoists. A friend of the writer who made this trip less than a week ago writes that he was unable to pass, and was obliged to turn back for the other route on account of new construction now under way. This badly needed improvement has been contemplated for some time, one thing after another having arisen to delay it; but the past will be forgotten if the work now begun is carried through to completion promptly and in a thorough manner.

Consequently tourists who have been advised to leave Albany for the West by going to the right from State street around the State Capitol into Washington street, and directly out Central avenue, thence along with the interurban trolleys to State street, Schenectady, must change their course. This is not a difficult thing to do if known in advance, though it means a slight detour to the north, making a junction about midway with the direct road from Troy to Schenectady. For those unacquainted with the district the following details are given:

Turn right from State street around the State Capitol as heretofore into Washington street, but after driving about five blocks on Washington street notice Knox street, which branches off squarely to the right. This narrow street does not amount to much in itself, but it is the beginning of the Northern Boulevard. Shortly after entering Knox street, cross over the viaduct which spans a low part of the city, and shortly afterward another viaduct across the four tracks of the New York Central railroad. A short distance beyond this second viaduct bear left and on through Loudonville and Newtonville. A few miles farther on this road intersects the Troy Turnpike, which is a direct line between Schenectady and Troy. It enters Union street, which keep to Jay street, nearly downtown in Schenectady, where turn left, riding two or three minutes to State street. The latter is the principal thoroughfare in Schenectady, and the former route will bring directly to it, passing the railroad station and over the canal bridge.

However, one bound west over the route passable at this time, without making a stop at Schenectady, will not be under the necessity of running to State street at all, but may *keep Union street directly through the city* until it comes to an end at Washington avenue. Then turn right on Washington avenue and cross the bridge over the Mohawk River from the western edge of Schenectady to the small town of Scotia, from whence the usual Albany-Utica-Syracuse route is resumed.

Touring in the opposite direction, from west to east, unless making a stop in Schenectady, turn left from Washington avenue, only two or three blocks from the bridge over the Mohawk River from Scotia, into Union avenue, which keep straight out until it intersects with the line from Newtonville and Loudonville to Albany. Keep on the Loudonville road to intersection with the Northern Boulevard near the outskirts of Albany, bearing right on the boulevard, crossing first the viaduct over the New York Central four tracks, then the viaduct over a low part of the city and through a section of Knox street to Washington street, Albany. Bear left on Washington street, which keep ahead to the State Capitol, then bearing right around Capitol into State street, which follow to Broadway.

These directions will save the tourist the probability of being obliged to retrace his steps if following the usual directions over this course, and it might therefore be the means of saving quite a little time and some trouble. More than that, a locally unacquainted motorist, finding the usual route impassable, would probably have considerable difficulty in ascertaining the optional route by making local inquiries.

Robert Bruce.

Changing Coil Connections.

Editor The Automobile:

[247.]—I am using a storage battery and an auxiliary battery of dry cells to supply current for the ignition system on the four-cylinder motor of my car, and I would like to be enlightened on the following points: Should any special reference be made to the positive or negative poles of the battery when connecting up the switch and ground wires of either battery? I am inclined to believe that there is a specific relation between the poles of the batteries and the ground and switch wires; also that improper connections would cause the early destruction of the platinum points of the vibrators. Possibly other evil effects might be produced. A. F. A.

Chicago.

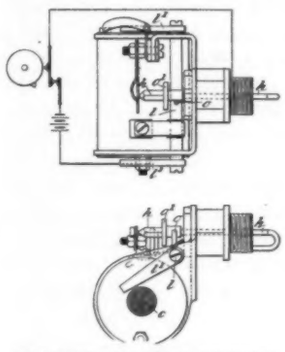
The direction in which the battery current flows makes no difference, so far as the operation of the coils is concerned; the vibrator contact points will suffer no more with the current flowing in one direction than in the other. It is advisable, however, to occasionally reverse the terminals so that the current will pass through the coils in the opposite direction. This is because the positive point is reduced by the action of the current considerably faster that the negative point, and the reversal of the poles will equalize the "wear" and keep the points in better condition than if this is not done.

Patents

Primary Igniter.

No. 796,349.—A. J. Postans, of South Kensington, England.

This igniter is of the class in which an electro-magnet built into the igniter actu-



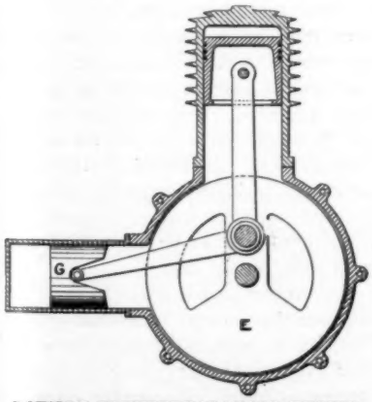
POSTANS PRIMARY IGNITER.

ates an armature to give a vibrating contact between the ignition points, somewhat after the manner of a buzzer. The electro-magnet is a single straight coil, and its two poles attract the soft iron fingers l^1, attached to the iron shaft l, which acts as a pivot for the fingers. Projecting from l is the pin o, which taps against the collar o^1 on the stem h. The action of this pin is to rotate h slightly besides retracting it to break the circuit.

Balancing Arrangement for Single-Cylinder Motors.

No. 795,901.—P. E. Dowson, of Hyde, England.

The principle of this invention depends on the fact that if in the ordinary single



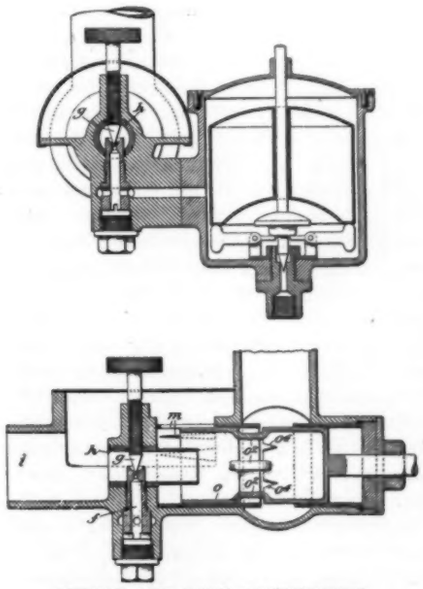
DOWSON COUNTERBALANCED ENGINE.

cylinder engine the counterweight E is made heavy enough to balance completely the axial vibration due to the piston and connecting rod, it introduces a transverse vibration of amount equal to the axial vibration, which it balances. In the present invention this transverse vibration is itself balanced by a bob-weight G, whose axial vibration is opposite to that produced by the counterweight E.

Carbureter.

No. 794,951.—A. E. Schaaf and V. E. Lacy, of Toledo, O.

This carbureter is of the float feed type with the spray nozzle adjustable by the needle valve g, as shown. The essential feature of the carbureter is found in connection with the throttle with which it is combined, this throttle being arranged to increase the opening of an auxiliary air inlet as the opening of the throttle itself is increased. The air enters at i, and the main stream passes through the tube h, past the spray nozzle, beyond which it combines with another stream entering through the auxiliary inlets m. The throttle indicated by o is in two parts, connected by the bridges o^2, and it is fully opened by moving it to the right from the position shown in the drawing. It may be completely closed by movement to the extreme left, and when opened only a little mixture passes in



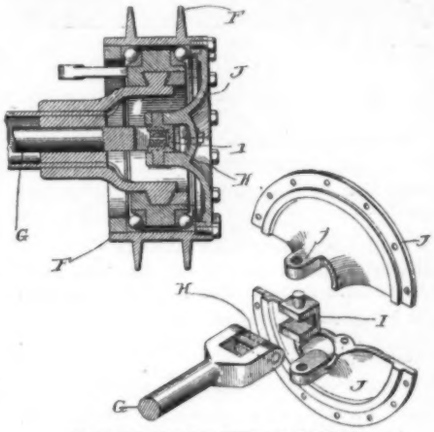
SCHAAF AND LACY CARBURETER.

through the triangular notches o^4. In this position only a very slight amount of air gets through the slits m. The intention is to maintain an equal mixture at any opening, but it is evident that this carbureter is not automatic in the sense of adjusting the auxiliary openings according to the speed of the air stream. Consequently it is necessary for the operator to take hills, for example, on a somewhat reduced throttle in order to get the necessary intensity of suction.

Front Wheel Driving Mechanism.

No. 796,121.—H. G. Hansen, of Milwaukee, Wis.

This is a universal joint connecting the driving shaft G and the wheel hub J, and its special feature is that the hub may be taken off the axle without loosening any bolts or the like in the universal joint. This is accomplished by making one member of the universal joint in the form of a yoke I, into which enters the block H pivoted in the end of the shaft. The yoke has pivot pins formed on it, and J is split for the purpose of assembling it over these



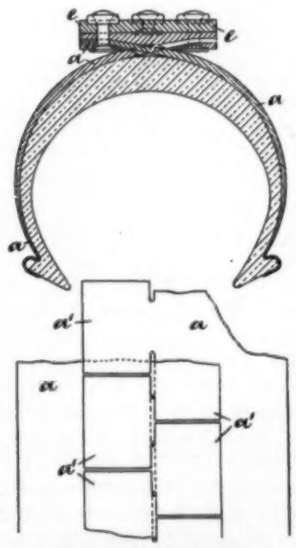
HANSEN FRONT WHEEL DRIVE.

pins and is held together by fitting into the hub ring F.

Non-Skidding Tire.

No. 795,906.—H. Garner, of Nantwich, England.

This tire is so arranged that when the leather tread and the metal rivets in it are worn they may become renewed, which is practically impossible with the common form of non-skidding tires. Another object is to protect the rubber portion of the tire shoe from chafing by the inner heads of the rivets. These objects are accomplished by the construction shown, which practically consists in making the leather covering a in two parts, which are cut and fitted together, as shown in the plan view below,



GARNER ANTI-SKID TIRE.

and in riveting the working tread e to the flaps a.

The good roads question is not one susceptible of local or class distinction. It is National, with a big N, affecting the progress of the Nation and the welfare of all the people.

THE AUTOMOBILE

VOL. XIII. No. 7

Published every Thursday by
THE CLASS JOURNAL CO.,
Flatiron Building, Madison Square,
NEW YORK CITY.

Cable Address - - - - Autoland, New York
Long Distance Telephone - 300 Gramercy, New York

SUBSCRIPTION RATES:

United States, Canada and Mexico, - One Year, $2.00
Other Countries in Postal Union, - One Year, $3.00

To Subscribers—Do not send money by ordinary mail. Remit by Draft, Post-Office or Express Money Order, or Register your letter.

FOREIGN SUBSCRIPTION AGENTS:

ENGLAND:—Iliffe & Sons, Limited, 3 St. Bride Street, Ludgate Circus, London, E. C.
FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque, Paris.
GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements should reach us not later than 5 o'clock p. m. Monday for the issue of Thursday following.

Copyright, 1905, by The Class Journal Company.

Entered at New York, N. Y., as second-class matter.

The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

Copies Printed in 1904, - - -	639,300
" " This Issue, - -	13,500
" " Since Jan. 1, -	460,500

Run the Cup Race Right-Handed.

The reason given by the Vanderbilt Race Commission for deciding at the recent meeting to run the race "left-handed," or in the same direction as that of track races, is unconvincing and naturally awakens some apprehension that other rulings of a like character may endanger the safety or success of the race.

Run in the customary direction (clockwise), the important turns, with one exception, would be right hand, whereas under the decision referred to the reverse will be the case.

Discussing the decision, the physical character of the course does not demand it, for the very moderate grades will certainly present no dangers to any driver who is competent to enter in a race against men who competed in the mountain circuit of Auvergne, picked especially for the difficulties it presented. The matter of taking the sharper grades at speed down hill can therefore be dismissed as not needing serious consideration in connection with a hard contest for international supremacy and as being quite overbalanced by more important considerations.

Chief among the latter is the fact that all of the contestants are accustomed to right-handed driving; the law of the road in America and in Europe, with the exception of the British Isles, requires that the driver shall keep to the right side of the road, and that he shall pass overtaken vehicles on their left side. It is the almost universal practice to build cars to be operated from the right-hand side, and anyone driving from that side can see better to take the turns if the race is run with the inside of the turns on that side of the car—that is, right-handed, or in the direction of the movement of the hands of the clock.

Another very important point, which apparently has not been given the attention it demands, is that in the straight stretches the contestants will expect overtaking cars to pass on their left, but if the race is run left-handed they will cut directly across to the inside of the road every time they turn a corner in order to avoid danger from skidding, thereby temporarily blocking the whole road until they swing back to the right side of the road after making the turn. How greatly the liability of collision will be increased can be seen when it is remembered that there are to be twenty cars on the twenty-nine-mile course at once, all started at two-minute intervals.

There is little doubt that objections to the decision will be raised by the European teams on their arrival here, and should the Commission, yielding to their protests, decide to run the race right-handed, the previous experience of the American team with the course in the elimination trials will go for naught. Considering the experience the foreign teams have gained in the Gordon-Bennett race, the American entrants cannot afford to lose any such opportunity for practice as the elimination trial would afford. And, on the other hand, if the decision made is adhered to in the race itself, it will give cause for just criticism on the part of the European contestants that this handicap was imposed for no good reason in sportsmanship.

In matters of such importance as the rules for the Vanderbilt Cup Race, it seems as if it would be well to consult with racing board members or outsiders who have had actual experience in road racing.

If it is, as the Commission seems to think, too late to increase the length of the course, to which the foreigners have already raised objection, it is not too late to remedy the mistake of requiring the contest to be run in the direction that is obviously the wrong way of the circuit.

✷

A Word About Lamps.

The suggestion comes from one who has done thousands of miles of touring over all sorts of American roads, east and west, that all fixed headlights and searchlights, particularly the heavy ones having combined generators, should have forged steel sockets for attachment to the brackets or yoke. The tremendous vibration set up in a lamp carried on a springy yoke by the engine, particularly of a two-cylinder car, and by roughnesses in the road surface, is a severe test of the lamp sockets and the metal sides of the lamp to which they are attached. Under this vibration the steel set-screw soon hammers out of shape the thread in the soft brass or malleable iron socket commonly used until the screws become loose; then vibration of the lamp on the bracket is set up and the socket piece breaks.

Even to the casual observer who notes the vibration of lamps on a car it is obvious that strong material should be used for securing the lamp to the car, both in the bracket or yoke and in the socket pieces. Forged steel combines the required strength with the desirable lightness, and it should be used for the purpose. Instead of soldering or riveting small socket pieces onto the thin brass sides of the lamp, the lamp maker would insure greater durability by forming the sockets integral with a steel band completely encircling the body of the lamp, either inside of the brass shell or outside, and riveted as well as soldered to it.

✷

Automobiles Out of Control.

Recent fatal accidents on country roads, which have had widespread publicity in the public press, are deplorable, but in some of these the victims will not have died in vain if their fate serves as a deterrent to those who when driving abandon caution—even common sense. We do not refer so much to fast driving on urban or suburban roads, which is usually illegal and always intolerable, but fast driving on country roads, even in the most sparsely settled districts. Leaving any question of legality out of consideration, there is the more immediate one of physical safety. Criminal carelessness is a mild term to characterize the actions of a man who will invite other and probably innocent persons to ride in a powerful car, and then "open it up" on an unknown road.

No railroad in the world would permit an engineer who was unfamiliar with a track to drive a fast train carrying passengers over the road, except possibly in some case of dire emergency which we are not now considering. It would certainly not do so knowingly in the ordinary course of affairs, and yet hundreds of sane and sober persons who drive automobiles do this very thing every day.

An unfamiliar road may have grade crossings—a barbarous makeshift which, for financial reasons, still exists here and in other countries; but never abroad as unprotected as here. At country crossings there is often neither gate nor gateman, even though the character of the approaches may hide the crossing from any distant view. The more unfrequented the district in which such crossings occur, the more chance that the engineer may be negligent about blowing his whistle; and under certain conditions of wind and weather the approach of a rapidly moving train may be undistinguishable to the ear, especially of one seated in a fast-moving automobile.

Holes in the road, obstructions around corners, either permanent or temporary, such as slow-moving wagons, stones or bulky articles inadvertently dropped from passing vehicles—these all may cause a sudden exit from the cares of this world and a mangled corpse for the relatives to mourn over when a car is *out of control.* That is the point. No vehicle known to man is safer to ride in than an automobile on the highway when it is traveling at any rate of speed so that it is *under control.* It can be stopped with extraordinary swiftness; it can be instantly swerved in its direction, to sidestep, as it were, any sudden obstruction, and its direction can be speedily and continuously reversed, an operation that can be performed with no kind of vehicle drawn by an animal.

It should be the unvarying rule of every automobilist, law or no law, never to drive at an uncontrollable speed on a strange road. Any other method is taking chances, and some day you will lose.

EIGHTEEN MONTHS IN PRISON.

And $100 Fine Is Penalty for Reckless Driving—Court Warns Others.

Special Correspondence.

PHILADELPHIA, Aug. 14.—In sentencing Chauffeur William H. Meyers to eighteen months' imprisonment and $100 fine for killing little Eldon Sarver in June last, Judge Audenried, in Common Pleas Court No. 1, on Friday last, delivered the prisoner, and reckless drivers generally, a severe lecture. Despite the recommendation of mercy by the jury, the punishment inflicted was a severe blow to Meyers and his friends, who were looking for an acquittal, or, at worst, a much shorter term of imprisonment. The lecture of the court carries all the more weight when it is considered that the judge himself is an ardent automobilist. Among other things, he said:

"The greatest possible punishment that could be meted out to the prisoner is the consciousness which must remain with him always that he has taken the life of a human being.

"The fixing of punishment in this case is not to be based upon the intrinsic offense, but as setting a warning or an admonition to those engaged in the same occupation.

"My observation is that there are no people in this community who are so utterly disregardful of the rights and safety of their fellow beings as those engaged in the management and making of automobiles. Careless and selfish people are to be found in all classes. There are many of them among drivers of horses. But the proportion of criminally reckless persons among chauffeurs is much greater, in my opinion, than that among horse drivers.

"The chauffeurs are well paid. They wax fat and grow impudent until they become a menace to the community.

"It is for this reason that, while giving full consideration to the jury's recommendation for mercy, I sentence Meyers to an imprisonment of eighteen months in the county jail and to pay a fine of $100."

The full penalty of the law, under the verdict, is two years in jail.

It is said that 200,000,000 francs are spent annually on automobiles in France.

Vanderbilt Cup Race Plans.

Arrangements for the Vanderbilt cup race and the elimination trial, to be held respectively on October 14 and September 23 next, were discussed at a meeting of the American Automobile Association racing board held August 10 in the Waldorf-Astoria, New York. It was a long session, lasting from 3 o'clock to 6 P. M., and was attended by the following members of the board: Robert L. Morrell, chairman; A. G. Batchelder, secretary; Col. E. H. R. Green, of Texas; R. Lincoln Lippitt, of Providence; A. L. Riker, of Bridgeport; Rolin H. White, of Cleveland, and T. H. Hilliard, of New York.

The meeting was closed to the press, but after it ended the chairman told of the decisions that had been reached with regard to the cup race and selection trials, and stated that another meeting of the board is to be held on September 1, when the rules for the race will be decided upon.

At last Thursday's meeting it was decided that the race shall be run in the opposite direction to last year's race, that is, left handed, or in the opposite direction to the movement of the hands of a clock. It was explained that the reason for this change was that the board, whose members also constitute the Vanderbilt cup race commission, wanted to have the contestants take the steepest hills on the up-grade, so as to minimize the danger. There is one hill, said Mr. Morrell, that would prove extremely dangerous if the race were run with the right hand to the pole.

The elimination race for the American team, on September 23, will almost certainly be run over a distance of 200 miles, over the same course as the cup race itself, the board being of the almost unanimous opinion that a trial equal to the full 300 miles of the final race would be too severe a test of the cars, while the shorter distance will be quite enough to determine their relative merits.

There are to be no controls or stopping places in either event, the contestants being started at two-minute intervals. The starting point is to be about an eighth of a mile from Mineola, where a grandstand with a seating capacity of 1,500 (about twice as large as last year's stand) is to be erected. The stand will be on the inside of the course, so that any part of the course can be reached quickly from it by the many roads within the circuit. The stand is to be built at an angle to the course, so that spectators may have a view of coming cars for a mile up the road without inconvenience.

In order that the commission may have its hands free to deal with the race alone, it has placed in the hands of Alfred Reeves, entire charge of the grandstand arrangements, including sale of the tickets—everything in connection with the stand, in fact, except its construction.

Special arrangements are to be made for the policing of the course and the maintenance of order and preservation of a clear road at the stand on both racing days. Three hundred Long Island men are to be sworn in as special officers to guard the course, and in addition a large detail of New York City special policemen, who will be off duty on the day of the race, is to be stationed at the grandstand to keep people off the course.

Crude oil is to be applied to the road surface, as was done last year, once a week, beginning this week, so that the course should be in excellent condition by the middle of October. It is estimated that the oiling will cost $4,000.

There are now twelve candidates for the American team, one car that was entered having been withdrawn. Seven of the twelve must be eliminated by the trial race on September 23. The race commission feels confident that France will be represented by a strong team, even should Théry and Caillois decline to defend France's possession of the cup, won last year by Heath.

Profiting by the experience of last year, when all available hotel or inn accommodations were taken well in advance, and garage facilities were inadequate, many of the entrants for the race this year have already taken advantage of the offerings of nearby hotels and inns. The White Sewing Machine Company has arranged for quartering its team and assistants at the Bull Head's Hotel, at the corner of the "Back Road" and the North Hempstead turnpike; the Pope-Toledo team will be housed at Krug's Hotel, on the Jericho turnpike, and the Franklin and Locomobile teams have reserved accommodations in the same locality—most of them from before the eliminatories until after the cup race. Quarters for the Fiat cars have been reserved at Poirrer's Garage, Garden City, and reservations have been asked for the Richard-Brasier and De Dietrich contingents as well. Demands for accommodations for others have also been made upon the hotels and road houses at Mineola, East Norwich, Roslyn, Lakeville and Hyde Park, and from present indications all available sleeping or garage accommodations will be taken long before the date of the race.

A CHECK TO LAW BREAKERS.

Special Correspondence.

SAN FRANCISCO, Aug. 9.—The record breakers who have their eyes on the San Francisco-Los Angeles record have just received a quietus to their ambition in a letter which has been sent out by Secretary Frey of the Automobile Club of California, indicating the club's disapproval of these contests and asking the authorities of the cities and towns along the route to arrest for breaking the speed laws any drivers who shall hereafter make the attempt. The letter has been sent to mayors, supervisors, chiefs of police and town trustees.

ATLANTIC-PACIFIC TOUR.

Megargel to Attempt Transcontinental Round Trip in Reo Car.

Percy F. Megargel, well known to the readers of THE AUTOMOBILE through his diary of the recent transcontinental trip from New York to Portland, Oregon, has returned from the Coast, and in a few days will leave New York City in an attempt to drive a 16-horsepower Reo touring car from New York to Portland, thence to San Francisco and back to New York by the Southern route. Several enthusiastic automobilists have made the transcontinental run, but so far no one has attempted the round trip.

Mr. Megargel will make the trip in the interest of the American Motor League, of which association he is a member, the main purpose being to gather reliable data with regard to the condition of the roads, the grades to be encountered, streams to be forded, distances from place to place, available stopping places and gasoline supply houses. The trip west will be made by the Northern route—practically the same as that traversed in the recent race to Portland; from Portland he will drive south to San Francisco, and return to New York by way of Salt Lake City and Denver. His detailed itinerary will be announced later.

Mr. Megargel will be accompanied by David Fassett, a skilled mechanic from the Reo factory. It is estimated that 112 days will be consumed before the tourists will arrive in New York again.

The *Reo Mountaineer*, as the car has been christened, is a regular stock touring car, of 16 rated horsepower. It is fitted with removable front seat, which will permit its occupants to sleep aboard when they may so desire. A 3-inch windlass has been built into the front of the frame, to be turned by a 14-inch detachable crank, for the purpose of aid in ascending unusual grades, or drawing the car through the many mud holes so often encountered in the Western roads. Two sprags have been fitted to each axle, and each sprag has welded to it a few inches from its lower end a flat steel plate about 4 by 6 inches, to prevent the sprags sticking too deep into sand or soft earth. A grademeter, speedometer, odometer, barometer and other instruments of value on such a tour have been added to its equipment, as well as a complete camping outfit for use in the wilds of the Rockies, or other ranges when inns or farm houses are not to be found.

GOOD] ROADS CONVENTION.

Special Correspondence.

JAMESTOWN, N. Y., Aug. 12.—A Good Roads convention, to further the cause of the New York-Chicago Highway, concluded its sessions to-day at Lakewood, a nearby summer resort on the beautiful Lake Chautauqua. Chautauqua County, world famous as the location of the Chautauqua Assembly, and known throughout the country as a beauty spot in the most picturesque section of old York State, is noted also for poor roads. The convention called by the Chamber of Commerce of Lakewood, an organization composed chiefly of Jamestown business men, was attended by a representative body of farmers of this prosperous county, and it is believed that the discussion will mark the beginning of a good roads campaign.

W. F. Auld, of Pittsburg, a summer resident of Lakewood, was elected chairman, and Judge J. B. Fisher delivered the address of welcome. Interesting and practical talks on good roads, and how to get them, were delivered by James H. MacDonald, State Highway Commissioner of Connecticut, a veteran in the cause, and by Frank D. Lyons, Assistant State Engineer, of Binghamton, N. Y., and Col. William L. Dickinson, of Springfield, Mass., the "advance agent" of the New York-Chicago highway.

On Friday evening a moonlight excursion on Lake Chautauqua was the feature of local hospitality, and on Saturday night a banquet at the Kent House again gathered the delegates together before their departure for home.

ATLANTIC CITY RACES.

Club Promoting Events to Celebrate Opening of Meadow Road.

Special Correspondence.

ATLANTIC CITY, N. J., Aug. 14.—The Atlantic County Board of Freeholders, after a prodding by the Automobile Club of Philadelphia and the local Hotel Men's Association, have started work on the last link of the meadow road from here across to Pleasantville, and announce August 31 as the day of the opening of the new highway to travel.

The recently organized Atlantic City Automobile Club has postponed its opening tournament for a fortnight. On September 2 and 4 it proposes to celebrate the opening of the new pike by a two-day tournament over the beach course, at which fourteen races will be run. All the events, with the exception of that for cars from 1,432 to 2,204 pounds, on the second day, will be at one mile, the exception being for two miles. All the races will be from a flying start except two gymkhana events. Tidal conditions will be such that the races will begin promptly at 2 o'clock P. M. each day.

TOLEDO SPEED LIMIT.

May Be Raised as Result of Official Auto Inspection Tour.

Special Correspondence.

TOLEDO, O., Aug. 12.—Toledo automobile owners and local chauffeurs are pleased at the announcement of the city councilmen that they favor enacting a new ordinance which will fix the speed limit in this city, except on the downtown streets, at fifteen or twenty miles an hour instead of ten miles as now prescribed.

This announcement was made shortly after the annual municipal tour of inspection which was made a few days ago in automobiles donated for that purpose. The leading machine of the inspection party was driven at ten miles an hour, as shown by its speed indicator. This was too slow for the city officials, and at the end of the tour several expressed the opinion that there was no reason why fifteen miles an hour should not be allowed instead of ten, as at present.

Mayor Finch explained that owing to the absence of an ordinance providing for the issuance of licenses, there was no way in which speed violators could be apprehended, as it is difficult to distinguish the owners without numbers attached to the machines. It looks now as though an agreement will be reached between the mayor and the council which will result in a license ordinance as well as a proviso that the speed may be increased on the outlying streets.

Magneto ignition for motorcycles is increasing in popularity abroad.

ILLINOIS ASSOCIATION.

Organized in Chicago and Officers Elected—Purposes Outlined.

Special Correspondence.

CHICAGO, Aug. 12.—The new Illinois State Automobile Association was formally launched last Wednesday when some 100 enthusiasts from the local and out-of-town clubs met at the Chicago Automobile Club's house, drafted a constitution and by-laws and elected officers.

The delegates from the different clubs of central and northern Illinois, including those from Bloomington, Decatur, Aurora, Pontiac and Ottawa, made the tour in a body, arriving in the city on Tuesday noon. They assembled in Aurora Monday afternoon and spent the night there. Early Tuesday morning they traveled to La Grange, where they were met by the advance guard of the Chicago Automobile Club, headed by Secretary Sidney S. Gorham. Forty machines made the trip from La Grange to Chicago, piloted by Jack Fry in his Apperson car. They passed through Lyons, Berwyn and Oak Park, and arrived at the Chicago Automobile Club's quarters about 1 o'clock, where an informal reception was held. After luncheon the tourists took a jaunt through the parks and boulevards of the city, escorted by several cars from the local club. In the evening the White City was visited and many of the sights were enjoyed.

On Wednesday more than 100 enthusiasts met at the clubhouse and drew up the constitution for the new Illinois State Automobile Association. Sidney S. Gorham was elected president, and the other officers chosen were: First vice-president, Samuel P. Irwin, of Bloomington; second vice-president, L. E. Meyers, Chicago; third vice-president, George W. Ehrhart, Decatur; secretary, N. H. Van Sicklen, Chicago; treasurer, H. N. Taylor, Chicago.

The following persons were elected directors: Ira M. Cobe, Chicago; L. E. Meyers, Chicago; John Farson, Chicago; S. S. Gorham, Chicago; N. H. Van Sicklen, Chicago; S. P. Irwin, Bloomington; Burt Vancil, Springfield; George W. Ehrhart, Decatur; H. A. Olson, Woodstock; Jesse Barker, Peoria, and L. Shumway, Rockford.

The objects of the association are to further the work of building good roads, secure favorable legislation throughout the State, and to obtain a uniform speed limit, if possible.

In the evening a run was made to Edgewater, where the golf club entertained with a dance. The tourists left for their respective homes on Friday.

AUTOISTS FLOCK TO JERSEY COAST.

Special Correspondence.

ASBURY PARK, N. J., Aug. 12.—Dealers declare that automobile owners are all away from the cities on vacation trips through the country, and a glance at the array of cars that can be seen on the three main avenues of this resort at any hour of the day bears out the statement. Nearly as many automobilists may be seen on Ocean and Grand avenues as horses, and there is more pleasure riding in automobiles this year than in carriages. The excellent roads throughout Monmouth county are largely responsible for the number of motorists that are attracted to this part of the New Jersey coast.

On a recent Sunday night Zacharias' garage, on Main street, held machines whose estimated worth was $100,000. From this statement some idea of the amount of money

tied up in automobiles now in this part of the state can be had.

While at least two New Jersey coast resorts claim to possess beach race courses which compare favorably with the famous Daytona stretch in Florida, Asbury Park will never be able to offer automobilists such an attraction. The beach all along the northern and central portions of the coast is too narrow, soft and shelving to warrant its use for driving or automobiling.

ROCHESTER GARAGE AND CLUBROOM.

In the accompanying illustration is shown the new establishment recently opened in Rochester, N. Y., for the sale and care of automobiles by the United States Automobile Company. It is known as the Plymouth Avenue Station, being located at Nos. 21 to 29 Plymouth avenue, next to the corner of West Main street. The building occupies a lot 140 by 130 feet, and comprises a one-story garage 100 feet square and one-story machine shop 100 by 40 feet, and a two-story building devoted to a salesroom 75 by 50 feet and large offices on the first floor and club rooms above.

The club quarters, which are furnished free of cost to the Rochester Automobile Club for one year, comprise a commodious assembly room, the secretary's office and a room for the wives and daughters of members. The decorations of the rooms are dark green with cream colored ceilings, and the furnishings are in mission style, with prairie grass carpets. A deep fireplace in the assembly room adds warmth and cheer in cold weather, while three of the corners are occupied by massive settees. The reading tables are constantly supplied with current automobile literature. Music lovers may enjoy the use of a piano donated by George G. Foster.

The atmosphere of a cartographer's office is given to the secretary's room by a large blueprint map of western New York State on a scale of a little less than three miles to the inch, on which are indicated the principal roads and their character. In addition to the map, there is an atlas given to the club by C. F. Garfield, which shows on a large scale every State in the Union, Canada and Mexico, and also foreign countries.

A gain of 126 members during the last year was reported by ex-Secretary C. F. Garfield in his report read at the annual meeting held the middle of July. This made the total membership at that time 159. The club is one of the most active in New York State, doing much useful work in the matter of marking the roads in its section, fighting objectionable automobile legislation, and protecting its members against persecution under the speed laws. The club has already placed guide-posts along the roads from Rochester to Lyons, to Sodus Bay, to Buffalo, and to Geneva, and is about to issue route cards like those of the Automobile Club of America, but for the western section of the State. The preparation of these cards is in the hands of the new secretary, Frederick H. Crum.

The location of the club rooms gives members the utmost convenience in the matter of storage and repair of cars. The machine shop is equipped with $5,000 worth of machine tools, forge, air compressor and similar conveniences. Owners of many cars have especial facilities for the replacement of parts, since the United States Automobile Company handles the Pierce, Thomas, Stevens-Duryea, Orient, Buick, Olds and National cars, and a large line of supplies. A special station for electrics is conducted by the company on Park avenue, in the best residence district of Rochester.

BUFFALO ORPHANS' DAY.

Eight Hundred Made Happy by Outing Given by Automobile Club.

Special Correspondence.

BUFFALO, N. Y., Aug. 12.—More than 800 youngsters, inmates of Buffalo's orphan homes, had "the time of their lives" on Wednesday when the local automobilists gave them an outing. Very few of the children had ever before taken an automobile ride, and the joy with which they realized hopes that had been fostered in their little breasts for weeks can only be imagined. And they were not the only ones who enjoyed the event. Many "grown-ups," members of the Automobile Club of Buffalo, and other machine owners, delighted in the outing.

The weather was ideal. Secretary Dai H. Lewis, of the Automobile Club, mustered 140 automobiles at 2 o'clock in the vicinity of the club's rooms at Main and Edward streets. The cars lined up for blocks around, and the arrival of 120 boys from Father Baker's institution, with the boys' band, was the signal to start. President Knoll then swung his car into line at the head of the procession and off they went.

As the cars moved down Main street the curb was lined with spectators. From the Terrace the parade passed to Franklin street and thence to Police Headquarters for review by Superintendent Bull, and to the City Hall, where Mayor Knight stood on the steps and bowed to the children. After driving a few blocks on Delaware avenue they all made for Athletic Park, one of Buffalo's pleasure resorts. A special gateway had to be made through the fence near the main entrance, and after all the children were in the real fun began. Every door was wide open, and concessionaires vied with Manager Walter of the park in the attempt to make the day one of perfect happiness for the children.

It had been intended to make a run to Tonawanda, but at 5 o'clock the children and many of the nurses who had charge of them were so tired that it seemed wise to abandon the trip. The cars took a jaunt around Delaware Park and the Zoo, and then carried the tired little people home.

SPRINGFIELD COMPANY IN NEW HOME.

Special Correspondence.

SPRINGFIELD, MASS., Aug. 12.—The new Cooley House Garage, just occupied by the Springfield Automobile Company, embodies most modern features, as well as being probably the largest in this section. The building has a frontage on Liberty street of 100 feet, and its depth of 117 feet gives a floor space of nearly 12,000 square feet.

The garage is of buff brick, one story high, and its front is largely of plate glass. The main office occupies the middle section of the front of the building, opening directly from the street. At its rear is a private office and women's waiting room. A corridor between these two enters the stock room. The boiler room occupies the rear right hand corner of the building and is slightly below the floor level. A men's waiting and smoking room is over this, a little above the main floor. The furnishings are modern throughout.

The Springfield Automobile Company is the oldest in the city, having been organized five years ago. The company has the local agency for the Stevens-Duryea and Locomobile, and, in addition, conducts a repair and storage business.

BATTERY COMPANY ELECTS OFFICERS

Special Correspondence.

BUFFALO, N. Y., August 12.—Several changes were made in the officers of the National Battery Company of this city at a meeting of directors held several days ago. R. L. Coleman, of Somerset, Va., who was formerly president, is succeeded by J. R. H. Richmond, of this city. Mr. Coleman was elected chairman of the board of directors. James MacNaughton was elected vice-president, and Ralph Kimberly secretary and treasurer.

OPEN AT ALL HOURS.

Special Correspondence.

SAN FRANCISCO, Aug. 10.—The Park Commission has made another concession to automobile owners. The South Drive of the park, which has been open to automobiles only until 11 o'clock, may now be used all night. This is the only park road which may be used later than 6 o'clock. The new rule is an informal one, the ordinance closing the road after 11 o'clock remaining in force, but instructions have been given to the park police not to make arrests on the South Drive after the hour named, provided the automobile parties are behaving in a decorous manner and not exceeding the speed limit.

While a test case of this ordinance was to have been made in the courts, the Commissioners state that the change has not been made on this account, but at the request of physicians, who state that the park roads offer them the shortest route to their patients in the Sunset district.

UNITED STATES AUTOMOBILE CO.'S GARAGE—HOME OF ROCHESTER AUTOMOBILE CLUB.

Bartlett & Frazier are conducting an automobile livery business at Huntington, Ind.

The Marstan Luncheon Rooms, of Boston, have added to its delivery service two Pope-Waverley electrics.

The Minneapolis Automobile Club is planning a two-day race meet to be held at the Hamline track early in September.

The Pope Motor Car Co., of Indianapolis, shipped last week three Waverley road wagons to Count A Faa di Bruns, Florence, Italy.

The Olive Automobile Co., 3970 Olive street, St. Louis, has secured the agency for the Wayne cars, as has also Charles Wilde, of Baraboo, Wis.

Willy Tischbein, president of the Continental Caoutchouc Company, of New York, has been elected a director of the parent company, of Hanover, Germany.

Commodore W. K. Vanderbilt, Jr., of the Seawanhaka Yacht Club, New York, has presented a trophy for a 100-mile auto-boat race to be contested on the Sound in September.

Bush & Burge, Seventh avenue and Main street, Los Angeles, have secured the Southern California agency for the Pierce Great Arrow. This agency was formerly held by L. H. Johnson, of Los Angeles.

The Reo Motor Car Company, of Lansing, has arranged to take over the Cleveland agency and operate it as a branch of the company. C. F. Gilmer, the present manager of the Cleveland agency, has been retained.

William Jose has been elected manager of the National Automobile Co., of Washington, D. C., succeeding John C. Wood, resigned. Mr. Wood, it is understood, will form a company for the purpose of handling second-hand automobiles.

The Michigan Automobile and Carriage Body Company, of Detroit, has been purchased by G. E. Mann, who becomes sole proprietor of the company, and will conduct the business under the name of the Michigan Auto Buggy Co.

Leonard E. Wales, of Wilmington, Del., has been appointed local counsel for the recently organized Auto Protective League, headquarters for which have been established at the office of the Delaware Auto Storage and Repair Co., Wilmington.

Arrangements are already being made by the Veeder Mfg. Co., of Hartford, Conn., for making odometer and tachometer fixtures for 1906 cars, as it is anticipated that the leading manufacturers will finish large lots of their cars at an unusually early date.

Through a compositor's error the horsepower of the Lambert automobile, Model 6, was given as 13 in the advertisement of The Buckeye Mfg. Co., on page 72 of the Advertising Section of The Automobile of August 3. This should have read 16-horsepower.

The Motor Car Equipment Co., successor to Emil Grossman, importer and manufacturer of automobile accessories, has removed from 43 Cortlandt street, New York City, to more commodious quarters at 55 Warren street, where it now occupies an entire building of three stories and basement. The company has issued three separate catalogues this season, and a fourth is now in course of compilation.

D. W. Henry, a salesman for the Electric Vehicle Company, of Hartford, is now visiting the trade between New York and Chicago, touring from place to place in a 40-horsepower Columbia.

The Union Garage, 4601-4603 Olive street, St. Louis, is now occupying its new garage. The building is two stories in height, 50 by 115 feet, and is so constructed that there are no pillars to obstruct the first floor space. The company handles the Union and Monarch automobiles.

The Pittsburg Automobile Company has been organized at Pittsburg, Pa., and applied for a state charter. The incorporators named are James Frances Burke, C. L. Roberts, E. T. Brockman, S. R. Ireland and H. C. Ward. The company will manufacture motor vehicles.

The Central Body Company, Connersville, Ind., will soon commence the erection of a factory building, 66 by 77 feet, and four stories in height. The new structure will be of brick and iron, and so constructed as to permit of additions being made from time to time, as may be required.

The drivers of the Fiat cars that will represent Italy in the Vanderbilt Cup race have been announced, as follows: Lancia and Nazarri, of the 1905 Gordon Bennett team; Louis Chevrolet, Paul Sartori and William Wallace. Sartori and Wallace, it will be recalled, drove in the Vanderbilt race last year.

The Atwater Kent Mfg. Works, makers of ignition specialties, formerly located at 112 North Sixth street, Philadelphia, are now occupying new quarters at 42, 44 and 46 North Sixth street. The new building is a modern fireproof structure, and gives considerable increase in floor space over that of the former quarters.

The Electric Vehicle Co., of Hartford, shipped more than sixty Columbia cars to France during July, most of which were electrics. S. Bianchi, Continental representative for this company, at 194 Boulevard Malesherbes, Paris, sailed this week for France, after having spent several weeks at Hartford and New York.

The selectmen of the town of Northborough, Mass., are the first to comply with the letter recently circulated by the Automobile Club of Worcester with regard to posting cross roads, and also the placing of sign boards giving the rates of speed prescribed within the town limits. Signs to this effect were posted last week.

Automobile imports into the United States this year show a marked increase over 1904. During the month of July ninety-eight automobiles were received at the Port of New York, against fifty-five for the same month in 1904. For the seven months ending with July, 533 machines were received at New York, against 316 for the same period in 1904.

The *Flying Dutchman III*, the new auto boat of H. L. Bowden, of Boston, capsized Sunday afternoon off Tom Moore's Rock, near Marblehead, Mass. The accident was due to Mr. Bowden making too sharp a turn. No one sustained any injury by reason of the accident, and the boat was soon bailed out, righted and towed to the Corinthian Yacht Club's float near by. Aboard the boat at the time of the mishap, besides Mr. Bowden, were H. H. Whitlesea, the builder, and Charles Biscoe, engineer.

The new garage of the Bellevue-Stratford Hotel, Philadelphia, which was only completed about two months ago, has proved to be inadequate for the needs of the patrons of the hotel, and arrangements have been made for a three-story addition, for storage purposes, as 1,405 Locust street. A building permit has been issued for the structure, which, it is estimated, will cost $7,000.

The Cook & Stoddard Co., of Washington, D. C., has leased for a term of years the large building at the corner of Twenty-second and P streets, formerly used as a riding academy, and will occupy it as a garage and salesroom in addition to its present quarters on Connecticut avenue. The company is Washington agent for the Winton, Locomobile, Cadillac, and Baker electric automobiles.

Robert W. Spangler and Sidney J. King, of Chicago, are now compiling automobile route books covering the main roads leading from the principal cities of the country. They are using a Reo car, and are first working on the route from Detroit to Niagara Falls. In the route books will be recorded detailed descriptions of the roads, character of the road bed, grades and distances from town to town, as well as location and character of hotels, garages, repair shops and gasoline stations.

RECENT INCORPORATIONS.

Milwaukee Automobile Engine and Supply Co., Milwaukee; capital, $6,000. Incorporators: Fred Lederer, B. Amann and John McCabe.

Euclid Garage Co., Cleveland, O.; capital, $50,000. Incorporators: E. C. Root, C. T. Snyder, C. E. Hourist, J. O. Boylan and J. M. Shellenberger.

Automobile Touring Co., Springfield, Mass.; capital, $4,000. Automobile garage. Incorporators: Adolf A. Geisel, Merrill T. White and Barte J. Griffin.

Miami Motor Car Co., Dayton, O.; capital, $25,000. Incorporators: Pierce Schenck, Charles E. Drury, W. W. Arnold, R. A. Herbruck and Carroll Sprigg.

Du Brie Motor Co., Detroit, Mich.; capital, $20,000. To take over the business of S. R. Du Brie and John D. Austin. Incorporators: John S. Austin, S. R. Du Brie, S. A. Commons and W. E. Nageborn.

Automobile Outing Co., Baltimore, Md.; capital, $1,000. Automobile dealer. Incorporators: Richard Keating, Jack O. H. Smith, Jr., Addison E. Mullikin, William C. Conwell and Roland R. Marchant.

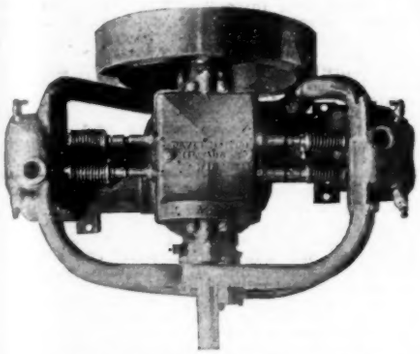
Carlson & Russ, Richmond Borough, New York City; capital, $5,000. To manufacture engines, motors, car trucks and vehicles. Incorporators: Charles O. Carlson, John D. Russ and Carl A. Erickson.

Standard Automobile Co., New York; capital, $500. To manufacture automobiles, motors, engines, etc. Incorporators: Edward Stetson Gripping, New Rochelle; George A. Burkhard and John G. Craig, of New York.

South Bend Machine Mfg. Co., South Bend, Ind.; capital, $50.000. To manufacture and sell machinery, tools, vehicles of all kinds, including automobiles. Incorporators: David McHenry, George Brown, Henry M. Huston, Elmer J. Martin, William Koeller, Stuart, MacKibbin and Shirley Reynolds.

INFORMATION FOR BUYERS.

DAVIS ENGINES.—The many advantages of the horizontal gasoline motor with two opposed cylinders have induced a number of manufacturers to bestow much thought and care on the production of engines of this type. Among these is the Davis Manufacturing Co., No. 935 Thirtieth street, Milwaukee, Wis., whose motor is illustrated herewith. Each cylinder has one-half of the crankcase cast integral with it, so that the necessity for bolting the cylinders to the crankcase is avoided. A cover on the top of the crankcase permits of easy access to the camshaft, cams, rollers and guides; these may be removed without difficulty to allow the cranks and connecting rods to be reached. All the mechanism is on top, making burrowing under the engine unnecessary. Bronze bushings are used for the main crankshaft bearings, while the crank pin bearings are babbitted. Connecting rods are of box section, hollow. The crank pins are oiled through the crankshaft, and oil from the pins is carried through the hollow connecting rods to the wrist pins in the pistons. By unscrewing a plug in the valve chamber the valves may be removed; all the valves are mechanically operated. These motors are made, when so ordered, with an automatic oiling device which forms part of the crankcase cover. The oiler starts work when the engine is started and stops when the engine stops, the only attention required, according to the manufacturers, being to keep the oil reservoir filled. Complete with inlet and exhaust pipes and a 75-pound flywheel, the engine weighs 240 pounds, and is rated at 12-14-horsepower. It is stated, however, that on the blocks the motor has developed 15-horsepower.



DAVIS OPPOSED CYLINDER MOTOR.

ALUMINUM CASTINGS.—The lightness of aluminum, when combined with sufficient strength, makes its use peculiarly advantageous for many automobile parts; but in order to produce good aluminum castings special knowledge and experience is necessary. The Light Manufacturing and Foundry Co., of Pottstown, Pa., has a department devoted exclusively to this class of work, and the illustration herewith shows a pile of aluminum castings made in this foundry. In connection with the foundry is a large machine shop, where the castings are machined. Besides aluminum castings, the concern makes castings of phosphor bronze and special bearing metals. To ascertain the strength of the special metal castings, the company had a number of samples tested by the government experts of the United States Ordnance Department at the Watertown Arsenal, and the results showed the metals to be well adapted to the work for which they are intended.

TURNER CARBURETER.—A carbureter in which an automatically operated valve is made to regulate the flow of gasoline into the mixing chamber, instead of using the customary float, is manufactured by the Turner Brass Works, of Chicago, and is handled by Charles E. Miller, of 99 Reade street, New York. The suction of the motor piston actuates a needle valve which is attached to a leather poppet or disc; the disc at the same time regulates the quantity of air admitted with the gasoline from the spray nozzle, making the use of auxiliary air valves unnecessary. The disc and needle valve attached are held closed normally by a light spring. A special form of the Turner carbureter is made for marine use, and among the advantages with which it is credited is the fact that, being without a float, its action cannot be affected by the pitching and rolling of the boat in rough water. The automobile carbureter is, of course, unaffected by grades.

GROUP OF ALUMINUM CASTINGS MADE BY LIGHT MANUFACTURING & FOUNDRY CO.

INDEX TO ADVERTISERS

Acetylene Gas Illuminating Co. 49
Adwear Tire Sleeve Works 49
Aldine Hotel 65
Allison & Co., G. F. 47
American Ball Bearing Co. 59
American Coil Co. 46
American Tube & Stamping Co. 62
Anderson & Sons Co. 50
Atwood Mfg. Co. 48
Auto Brass & Aluminum Co. 47
Auto Exchange and Supply Co. 47
Auto Front Drive Mfg. Co. 54
Auto Rebuilding Co. 81
Auto Top Mfg. Co. 51
Automobile Equipment Co. 47
Automobile Supply Co. 48
A-Z Co., The 50

B. & J. Mfg. Co. 56
Baker Motor Vehicle Co. .....Cover
Baldwin Chain Mfg. Co. 50
Baum's Castorine Co. 82
Bay State Stamping Co. 46
Beebe, A. M. 51
Beckley-Ralston Co. 47
Beilfuss Motor Co. 56
Bemus, T. Alton 56
Black & Kreuger 64
Bliss-Chester Co. 43
Blomstrom Motor Co., C. H. .....Cover
Boston Auto Gauge Co. 66
Boston Automobile Exchange 48
Boston Cycle & Sundry Co. 47
Bowman & Morrison 48
Bowser & Co., S. F. 43
Bradford Motor Works 52
Brennan Motor Co. 66
Brewster, Nestor H. 43
Briscoe Mfg. Co. 50
Bryant Steel Wheel and Rim Co. 74
Buckeye Mfg. Co. 86
Burgin Bros. 49
Burlington Ry. 49
Byrne-Kingston Co. 73

Cadillac Automobile Co. .....Cover
Camp Cycle Co. 55
Carr, F. S. 47
Central Body Co. 51
Champion Co., Albert 48
Chandlee & Chandlee 43
Chelsea Clock Co. 46
Chicago Battery Co. 48
Cleveland Oil Soap Co. 56
Cleveland-Canton Spring Co. 56
Collins & Son, G. A. 51
Concentrated Acetylene Co. 64
Conklin-Kent Co. 43
Constant Co. The 48
Continental Caoutchouc Co. 79
Continental Motor Mfg. Co. 52
Corbin Motor Vehicle Corporation 85
Corwin Mfg. Co. 86
Covert Mfg. Co 50
Crane & Richardson 47
Crawford Automobile Co. 83
Crucible Steel Casting Co. 50
Cullman Wheel Co. 63

Daimler Mfg. Co. 89
Dayton Electrical Mfg. Co. 66
Decauville Automobile Co. 92
Detroit & Buffalo Steamboat Co. 43
Diamond Chain & Mfg. Co. 46
Diamond Rubber Co. 74
Dietz, R. E. 68
Dixon Crucible Co., Joseph 68
Dow Portable Electric Co. 48
Draper Bros. Co. 49
Duff Mfg. Co. 66
Dyke Auto Supply Co., A. L. 58

E. H. V. Co., The 84
Eastern Auto Appliance Co. 47
Eclipse Buggy Co. 51
Elbridge Electric Mfg. Co. 70
Eldredge Electric Mfg. Co. 46
Electric Storage Battery Co. 57
Electric Vehicle Co. 83
Elmore Mfg. Co. 83
Empire Rubber Co. 58
Excelsior Supply Co. 46

Fairmount Engineering Works 47
Fast, Otto 51
Flandrau & Co. 72
Ford & Dennen 47
Franklin Mfg. Co., H. H. 93
Franklin Portable Crane and Hoist Co. 56
Frost, F. E. 59

G. & C. Battery Co. 64
G. & J. Tire Co. 78
Gabriel Horn Co. 54
Garford Co., The 71
Garlick Auto Prop. Co. 46
Garlius, B. 48
Gilbert Mfg. Co. 49
Goodrich Co., The B. F. 77

Goodyear Tire and Rubber Co. 46
Grand Hotel, The New 65
Gray & Davis .....Cover

Hardy Co., The R. E. 48
Harris Oil Co., A. W. 54-55
Hart, Wm. R. 50
Hartford Rubber Works .....Cover
Hartford Suspension Co. 62
Havemeyer Oil Co. 69
Haynes-Apperson Co. 89
Heinze Electric Co. 70
Heller, Joseph S. 81
Herz & Co. 54-55
Hoffman, Geo. Wm. 47
Holley Bros. Co. 73
Hollis, Park & Pollard 47
Hopson & Chapin Mfg. Co., The 50
Hotel York 65
Hussey Drop Forge & Mfg. Co. 60

Illinois Central Ry. 57
Imperial Brass Mfg. Co. 64
Induction Coil Co. 48
Ithaca Carriage Co. 51

Jackson Automobile Co. 82
Jeffery & Co., Thomas B. 91
Jersey Brake Co. 61
Jones & Burt 55
Jones, Wm. S. 67
Jones Speedometer 71

Kells Mfg. Co., W. J. 50
Kent Mfg. Works, Atwater 48
Kirkham Motor Mfg. Co. 52
Knox Automobile Co. 88
Kokomo Rubber Works 78

Lawton Mfg. Co. 46
Le Marquis Tire Co. 49
Levy & Co., Manasseh 46
Light Mfg. and Foundry Co. 50
Lipman, Carl E. L. 52
Little Wonder Carbureter Co. 60
Lobee Pump Co. 50
Locke & Co. 72
Locomobile Co. of America, The..... 83
Lubron Mfg. Co. 47

McCord Mfg. Co. 62
McDonald, Wessels & Ames Co. 47
Manhattan Storage Co. 68
Manning Mfg. Co. 49
Maxwell Brisco Motor Co. 87
Merkel Motor Mfg. Co. 53
Mezger, C. A. 48
Michelin Tire 76
Middletown Auto Body Co. 51
Miller, Charles E. 70
Milwaukee Steel Foundry Co. 50
Moline Automobile Co. 84
Monarch Automobile Co. 88
More Power Co. 46
Morgan, B. 47
Morgan, W. J. 57
Moss Photo-Engraving Co. 72
Motor Car Equipment Co. 59
Motor Car Specialty Co. 67
Motor Car Supply Co. 47
Myers-Dayton Top Co. 51

National Carbon Co. 59
National India Rubber Co. 69
National Motor Vehicle Co. 85
National Oil Heating Co. 46
Neustadt Co., J. H. 53
Never-Miss Spark Plug Co. 48
Newmastic Tire Co. 49
New Process Rawhide Co. 59
New York Coil Co. 70
New York Gear Works 49
New York Automobile Exchange 61
New York & New Jersey Lubricant Co... 47
New York Telephone Co. 54
Nordyke & Marmon Co. 82
Northern Mfg. Co. 84
Nuttall Co., R. D. 50

Oakes & Dow 48
Ofeldt & Sons 46
Olds Motor Works 94
Orswell Ignition Co. 55

Pacific Tucking & Mfg. Co. 62
Packard Electric Co. 47
Packard Motor Car Co. 80
Parish & Bingham Co. 50
Parker Lock Switch 47
Peerless Motor Car Co. 88
Pennsylvania Rubber Co. 76
Phila. Ornamental Wire Co. 56
Pile-Bloc Co. 55
Pioneer Brass Works 50
Pittsburg Reduction Co. 50
Pittsfield Coil Co. 48
Pneumatic Tire Protector Co. 54
Pope Motor Car Co. 90
Portland Garage 47
Post Mfg. Co. 62
Post & Lester Co. 48
Premier Motor Mfg. Co. 90

R. & C. Indicator Co. 58
Racine Brass & Iron Co. 50
Raimes & Co. 59
Rajah Auto Supply Co. 58
Remsburg Mfg. Co., E. J. 69
Rensselaer Hotel 65

Reo Motor Car Co. 85
Republic Rubber Tire & Shoe Co. 49
Riverside Body Factory 51
Robert Instrument Co. 46
Rochester Die Shaper Co. 52
Rose Mfg. Co. 67
Royal Equipment Co. 47
Royal Motor Car Co. .....Cover
Rubay, Leon 48
Rushmore Dynamo Works 68

Sampson Leather Tire 75
Scoville & Peck Co. 67
Seidler-Miner Electric Co. 48
Shaw, Ora D. 46
Shawver Co. 46
Shelby Steel Tube Co. 58
Skat Mfg. Co. 46
Smith Co., A. O. 56
Smith & Mabley 95
Snow, N. H. 51
Speed Changing Pulley Co. 67
Splitdorf, C. F. 48
Sprague Umbrella Co. 72
Springfield Metal Body Co. 51
Springfield Moulding Works 47
St. Louis Motor Carriage Co. 81
Steam Carriage Boiler Co. 47
Steel Ball Co. 43
Stevens Arms & Tool Co. 87
Stimpson, Edwin B. 43
Stolp Mfg. Co. 54
Streit Machine Co., A. 51
Sunbury Mfg. Co. 54
Supplimentary Spiral Spring Co. 58
Swinehart Clincher Tire & Rubber Co. .. 61

Tennant Auto Tire Co. 69
Thomas Motor Co., E. R. 82
Timken Roller Bearing Axle Co. 61
Tokheim Mfg. Co. 60
Trebert Auto & Marine Motor Co. 52
Trebert Gas Engine Co. 52
Tucker, C. F. 46

U. S. Emergency Case Co. 58
Ultra Pump & Power Co. 48
Uncas Specialty Co. 53
Upton Machine Co., The 50
Upton Motor Co. 52

Veeder Mfg. Co. 71
Vehicle and Implement Spring Co. 50
Vehicle Specialty Co. 71
Voigt, Em. 62

Wabash Railroad 81
Walker Co., E. C. 46
Walworth Mfg. Co. 43
Warner Instrument Co. 69
Watrous Auto Co. 81
Wayne Automobile Co. 81
Webster Mfg. Co. 66
Weed Chain Tire Grip Co. 55
Welch Motor Car Co. 81
Western Tool Works 84
Western Motor Co. 52
Weston Electrical Instrument Co. 59
Wheeler, F. H. 53
White Sewing Machine Co. 86
Whitlock Coil Pipe Co., The 57
Whitney Mfg. Co. 55
Wiley & Son Co., W. F. 49
Wilson Auto Clock Co. 49
Winkley Oiler Co. 57
Winton Motor Carriage Co. 96
Witherbee Igniter Co. 64
Wray Pump & Register Co. 60

SPECIAL NOTICES

Advertisements inserted under this heading at 20 cents per line; about 7 words make a line. Remittance should accompany copy. Replies forwarded if postage is furnished.

FOR SALE—Splendid Winton touring car, just overhauled, good as new, machinery in A1 condition; price, $500; worth double the price. James V. Schenck, 4 Glenside Pl., Brooklyn, N. Y. Aug 10-17

A TEN-PASSENGER WAGONETTE; sample car; 1905-6 model; steam; price and description on application. Thompson Auto Co., Olneyville, Sq., Providence, R. I. t.f.

A MANUFACTURERS AGENT—An experienced sales manager, thoroughly familiar with the automobile sales business in New York and vicinity, is open to propositions from manufacturers on any reasonable basis. Address, New York, care The Automobile. Aug 10-17

A SPLENDID OPPORTUNITY for hotel and livery. Two 2-seated and two 3-seated brakes and one 16-passenger 'bus, all electric, will be sold at low prices and easy terms. Standard construction, practically new, and in first-class condition every way, including batteries; run but very little. Send for photos and prices. S. F. Bancroft, 2400 Michigan Ave., Chicago, Ill. t.f.

ARTILLERY WHEELS—We have a collection of a few odd sets of Midgley pressed steel wheels with clincher, perfected Dunlop and single tube rims, which could be used to advantage in building a new machine or in remodeling an old one. This collection is a miscellaneous one, composed of sample sets, exhibition wheels and unsold stock, and not scrap or "seconds." Each and every wheel sold under guarantee. They will improve the appearance of your machine and make your old car look like an up-to-date model. While they last we are offering them at extremely low prices. We have a special offer to make Stanley agents and machine owners. Write for booklet. The Midgley Mfg. Co., Columbus, Ohio. Aug. 17

AUTOS FROM $100 UP—Special 30-day sale. All of the cars we now have in stock must be sold within the next 30 days at some price. Call and inspect them, make us an offer and we will confer with the owners. We need the space and owners need the money. Some will be sold as low as $100, others must bring $3,000. All worth $600 to $10,000. Following is a partial list of what you will now find at our spacious salesroom: 50 h.p. Boyer tonneau; 2-cylinder, 16 h.p. Yale tonneau; 2-cylinder, 16 h.p. Apperson tonneau; Model "B" Cadillac; 1905 side-entrance Jackson tonneau; late model 1904 Auto car exactly like 1905 make; French De Dion tonneau; Pope-Toledo touring car; Oldsmobile tonneau; 4-cylinder French Mors tonneau; 40 h.p. Mercedes tonneau; 16 h.p. French Darracq tonneau; 1904 White steamer, canopy top; special built 2-cylinder racing Peerless tonneau; type 8 Searchmont; Winton, surrey entrance; Winton tonneau; elegant German family touring car; Ward Leonard tonneau; 2-cylinder Elmore tonneau; Fredonia tonneau; Stanley steamer; Columbia electric surrey, batteries as good as new; 1904 Knox runabout; Wood's electric hansom; Mobile brougham, practically new; Columbia extension front electric brougham; Pope-Toledo steamer; Waverly electric runabout; Auto car dos-a-dos; 12-16 h.p. Decauville tonneau; Mobile runabout and dos-a-dos; Rambler runabout; 12-passenger Mobile wagonette; air-cooled Knox tonneau, 5 or 7 passengers; enclosed 14-passenger 'bus; Wood's electric cabriolet; Steven's-Duryea and many others. Also all automobile parts, such as bodies, running gears, engines, transmissions, boilers, burners, wheels, tires, etc., to be sold at a sacrifice. Manhattan Storage Co., largest dealers in second-hand automobiles, 334-340 West 44th St., New York City, two blocks from 42d St. Station 9th Ave, "L." Three blocks from Subway. Aug17

DE DION 5-h.p. Motorette, perfect running order; will sell for $300, or exchange for Cadillac or Ford, or for 1904 Grout, and cash; want more power for hills. A. S. Sherman, Ticonderoga, N. Y. Aug 10-17

FIRST CHECK over $350 buys a high-grade gasoline runabout, best condition, latest model. H. Hersch, 179 Sawtell Ave., Cleveland, O. Aug17

FOR SALE—Pope-Hartford Model B; new; never used; $650. G., care The Automobile. Aug 10-17-24

FOR SALE—1904 Columbia electric automobile, with top; in good condition; $450. Dr. Hall, Trenton, N. J. Aug17

FOR SALE—8 1-2 h.p. gas auto engine, also rear axle and wheels, less tires, good chain. D. P. Sims, Hill City, Kans. Aug17-24

FOR SALE—One 16-h. p. automobile; run about 200 miles; it is in excellent condition. E. L. Juniper, Nelsonville, O. Aug 31

FOR SALE—Franklin 1904 light tonneau with both standing canopy and cape tops; $1,250 f. o. b. Address, 502 Chamber of Commerce, St. Louis. Aug 17

FOR SALE—First-class automobile business in city of 150,000 inhabitants; sold ninety machines in 1904, like number this year; good repair business. Opportunity, care The Automobile. Aug17

FOR SALE—One Rambler, Model E, perfect condition, new tires; one Courier runabout, Style D; run less than 1,000 miles; prices very low. Address, Courier, care The Automobile. Aug 17